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Original Communications.

THE OIL OF GAULTHERIA.

By Drs. H. C. Wood and Hobart A. Hare.

THE use which has been made of the oil of gaultheria in rheumatism has been apparently attended with so much advantage that we have been led to make a study of its action upon the animal organism, directing our attention, first, to the symptoms which it produces when given in large quantities by the stomach; then to its effects upon the respiration and circulation; and, finally, its fate within the organism, and its relations with salicylic acid.

When a large dose (one to two fluidounces) of the oil of wintergreen is given to a good-sized dog by the mouth there appear at once great restlessness and discomfort, and an evident nausea, and finally vomiting. There is evident pain in the belly, the walls of which are retracted and hard, a constant desire for water, which keeps the animal standing with its head over a bucket of water, out of which he occasionally attempts to take a sip, which is no sooner done than his discomfort seems to be increased, probably because of the burning sensation produced by the cold water coming in contact with the volatile oil.

Following this there is impairment of power, chiefly in the hind legs, the movements in these members being incoördinated and

clumsy. The animal now lies down, and then, seemingly propelled by an excessive thirst, rises with difficulty and goes to the water, of which he takes no more than he did before. All the symptoms show the presence of acute gastritis.

In one experiment the oil was given at 2.10 P.M.; the vomiting occurred at 2.30, but the matters vomited did not possess as strong an odor of the drug as might have been expected.

At 3.40 P.M. general violent convulsions came on, lasting some minutes, and ending in the dog lying on his side and going through a series of running movements. At 3.45 the breathing was 122 per minute and very labored.

At 4 P.M. the dog got up and walked to the bucket, and stood over it, but in an instant lay down without drinking. He was pushed with the foot to make him get up, struggled a moment, then went into violent general convulsions as before, followed by running movements. The convulsions seemed to be spinal in origin, without unconsciousness. At 5 o'clock the dog died in wild convulsions, having had almost continuous convulsions for over half an hour.

When small doses (16 m. or 1 c.c.) of the oil are injected into the jugular vein of a dog they seem to produce little if any effect, either in the respiratory or cardiac movements. There is no change of any consequence in the pulse-rate or arterial pressure, and unless the dose be given very rapidly or in larger amount the respiratory conditions remain almost unchanged. If the amount of the drug injected be now increased to 2 c.c. or 3 c.c. (30 to 50 m.), the effects are more marked.

No sooner has the drug been fairly injected into the jugular vein than the dog becomes restless and his respirations fuller and more rapid, while the arterial pressure is slightly decreased. The pulse-rate is, however, slightly increased. This condition lasts for three or four seconds, and is followed by a return to almost normal on the part of the respiration, while the arterial pressure is greatly increased over its normal height before the injection.

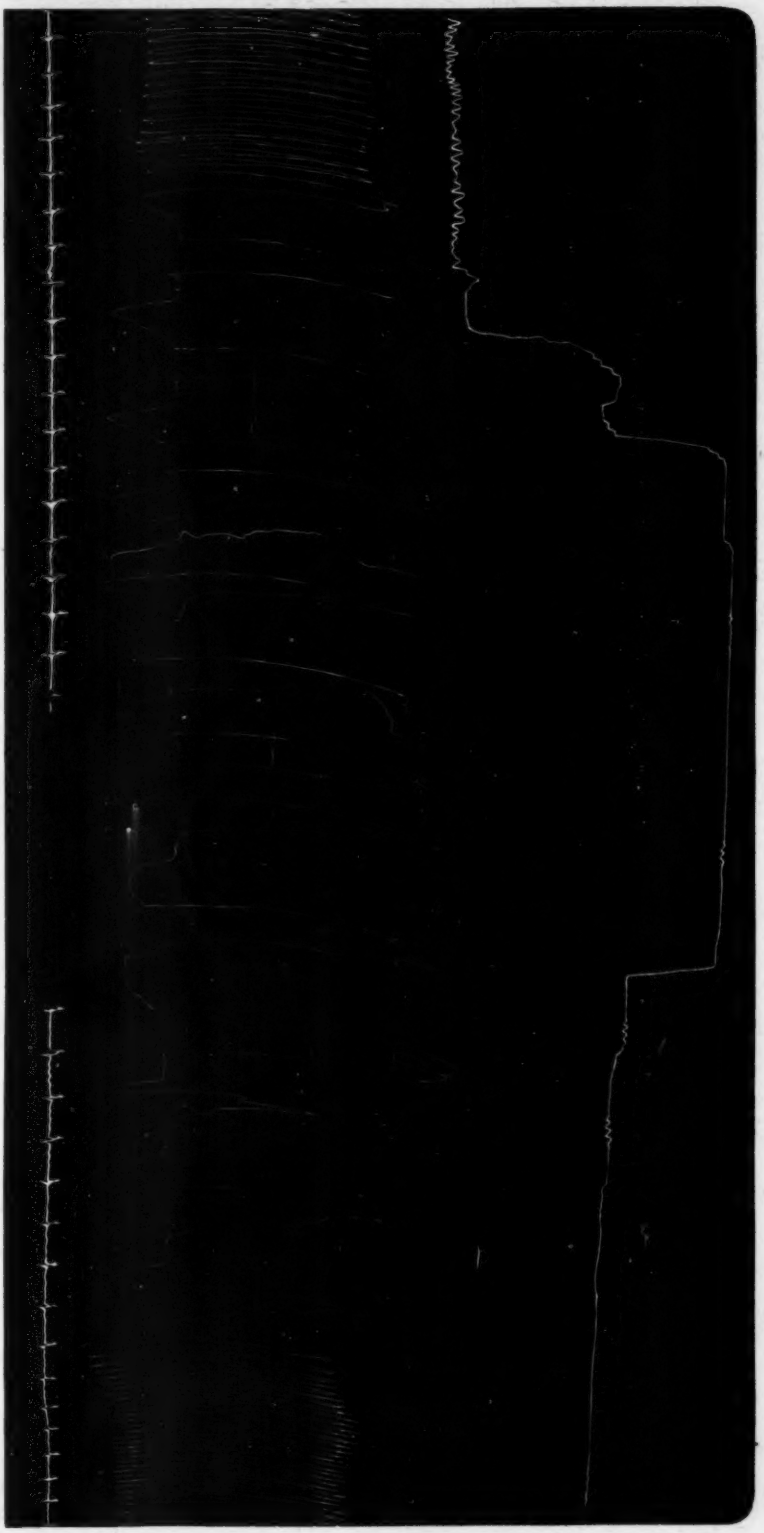
The return to normal is, however, only of a few seconds' duration; the rapid respiratory movements and the *de*crease in pressure and *in*crease in pulse-rate return, to last for a slightly longer or shorter time, as the case may be.

In the normal dog the injection of thirty to fifty minims of the oil of gaultheria produces, therefore, a series of cycles, in which there is a marked increase of respiration and decrease of arterial pressure, passing gradually into normal respiration and normal arterial pressure, to be succeeded after a time by a new cycle of change. In order to determine whether the respiratory phenomena were the result of some action on the peripheral fibres of the pneumogastric or were due to a centric influence, we experimented upon dogs in which the vagi had been cut previous to the injection of the oil. Under these circumstances it was found that the alterations of respiratory rhythm are much more pronounced than in the uninjured animal. The change from the very slow distant respiration of divided vagi was colossal. At the height of the paroxysm the respiratory rate, which before the giving of the oil had been 4 per minute, rose to 288 per minute. After the rapid respiration, during the period of slow breathing, the respiratory rate fell to 12.

The respirations during the period of rapidity seemed to be almost as full and deep as at any time. The cycle of respiratory change from the beginning of one paroxysm of rapid breathing to the beginning of the next varied considerably in length. Sometimes it occupied one minute, in other instances several minutes. Towards the last of the experiment the respirations gradually became more and more slow, but persisted for about one minute after the cessation of the heart's action. These experiments seem to prove that the oil of gaultheria acts directly upon the respiratory centres as a very powerful but peculiar stimulant.

It will be seen that the phenomena resembled somewhat those of the so-called Cheyne-Stokes respiration,—a form of breathing concerning the philosophy of which there are many theories, none of which to our thinking are thoroughly satisfactory. It is well known that when the spinal cord is under the influence of strychnine, alternate periods of furious convulsive discharges of nerve force from the spinal cells alternate with periods in which the relaxation is so extreme that we can well believe the tone of the muscles is below the normal. A possible explanation of the respiratory phenomena of gaultheria-poisoning is, that the condition of the respiratory centres is similar to that of the spinal cord under the influence of strychnine, and that the rapid breathings represent a respiratory convulsion, the slow breathing respiratory relaxation, and that the drug must be considered a respiratory stimulant.

The respiratory influence of this drug is so great that it probably dominates the action upon the circulation, and we therefore made



TRACING No. 1.

experiments upon curarized dogs to determine the influence of the oil of gaultheria upon the circulation, when by artificial means the respiratory function is uniformly maintained. If, under these circumstances, the oil of gaultheria be injected into the jugular vein in doses of thirty to fifty minims, there is an immediate and very decided fall of the arterial pressure, which lasts for thirty or forty seconds, when it is followed by a rapid rise, which continues until the pressure is much beyond its original condition. There seems to be now no rhythm of arterial pressure like that which occurs in the normal dog after the injection of the oil, and we therefore must conclude that the phenomena which we have noted in the normal dog are chiefly secondary to the disturbances of respiration.

These changes of pressure may be found in the following experiment, which we have confirmed by repetition.

Experiment 1.—Weight of dog, 30 pounds; small doses of gaultheria; dog curarized; pneumogastrics entire.

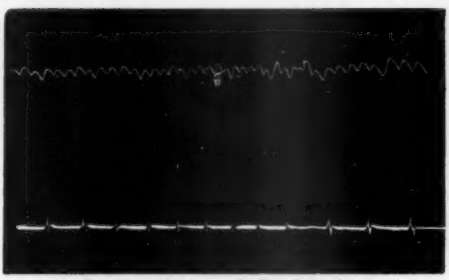
Time.	Drug.	Press.	Pulse.	Remarks.
3.20.50	Oil 1.5 c.c.	90–80	138	
3.22	.....	60	210	
3.24	.....	70	186	
3.25	.....	88	150	
3.27	.....	120–130	180	
3.29	.....	140	198	
3.31	.....	140	198	
3.33	.....	160–164	156	Art. resp. appar. broke down.
3.35	.....	220–260	54	

In order to determine the cause of the fall of the arterial pressure in the first part of these experiments, and the subsequent rise of pressure, we cut the spinal cord in the upper cervical region of a powerful dog, maintained artificial respiration, and then injected the gaultheria. The result is expressed in the following experiment.

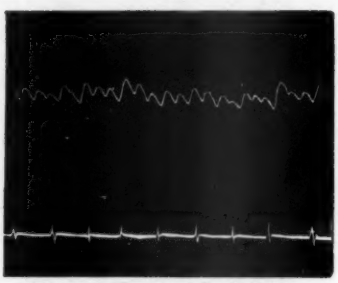
Experiment 2.—December 26, 1885; very large dog; weight, 32 pounds.

Time.	Drug.	Press.	Pulse.	Remarks.
3.30	.....	.....	.....	Cut cord in upper cervical region; artificial respiration.
3.37.50	.....	46	198	
3.38	3 c.c. oil	46–50	192	
3.38.20	.....	.....	.....	Injection ended.
3.38.40	.....	44–50	162	
3.39	.....	40	204	
3.39.05	3 c.c. oil	40	186	
3.42	.....	26	.....	No pulse; dog dead.

This experiment shows that the fall of the arterial pressure in the beginning of the first experiment, as well as the subsequent rise of pressure, were produced by an action in the vaso-motor centres, since neither of them occurred in Experiment 2, although the amount of the oil of gaultheria per pound of dog was about twice as much as in the previous one. In other words, before paralysis of the vaso-motor centre 1.5 c.c. of the oil of gaultheria caused a great fall and rise of the arterial pressure, whilst after paralysis of the vaso-motor centre 3 c.c. had very little effect. In order to show the little effect which the first 3 c.c. of the oil of gaultheria had, after section of the cord, the following tracings, showing the actual heights before and after the injection, are given.



TRACING NO. 2. Before injection.



TRACING NO. 3. After injection.

The large size of the pulse-wave on Tracing No. 3 shows how little effect the 3 c.c. of oil of gaultheria had had upon the cardiac force.

We have already shown the powerful stimulating influence which this drug has upon the respiratory centres, and the later experiments which we have just discussed show that it is also a powerful vaso-motor stimulant.

The characters of the convulsions in the dogs poisoned with it (given by the mouth) indicate that they are spinal. We have not positively proven this, but it appears as though the spinal cord was also stimulated by the oil.

The dogs poisoned by the mouth died largely on account of the local effects of the drug upon the gastro-intestinal mucous mem-

brane and of its influence upon the nerve-centres, but when the dog is killed by intravenous injection of the oil the heart is paralyzed before respiration ceases, although at the same time it is remarkable how considerable are the individual pulse-waves when the pressure is almost at zero.

The results of our experiments upon the lower animals may be summed up as follows: In large doses, oil of gaultheria acts as a powerful irritant to the gastric mucous membrane, producing violent gastritis, with excessive vomiting, but in our experiments without purging. It is a stimulant of great power to the respiratory centre and to the vaso-motor centres, and probably also to the motor centres of the cord; in sufficient amount it acts as a paralyzant to these same centres. Upon the heart it exerts a paralyzant action, only apparent when very large amounts of it are in the blood, and very feeble when compared with that of most other volatile oils.

Very few cases of human poisoning by this drug have been put on record, and, briefly stated, they are as follows:

In the *Philadelphia Medical Examiner* for June, 1852, p. 347, Dr. T. J. Gallaher reports the case of a boy, æt. 9, who swallowed at least half an ounce of the oil. Shortly afterwards he ate some supper, after which he vomited freely, with a good deal of retching. There was great irritability of the stomach and all the symptoms of acute gastritis. His skin was hot; pulse, 125 per minute. Consciousness was retained. The respirations were very slow and laborious. There was marked dulness of hearing. Perfect recovery was reached in about two weeks.

In the *New York Medical Gazette* for 1867, p. 380, Dr. Juvet reports the case of a farmer, æt. 55, who, by accident, drank about half an ounce of oil of wintergreen of his own distilling, and therefore not very pure. He no sooner discovered his mistake than he said he would die, and refused to send for a doctor, saying that it would be a useless procedure. He drank large quantities of milk and eggs, and swallowed an infusion of tobacco in order to provoke vomiting. When the doctor at last arrived the patient's mind was perfectly clear, and he described how the occurrence happened very clearly. He suffered from severe pain in the stomach and hypochondrium, accompanied by an intense thirst, and "a kind of death sinking." He was perspiring very profusely. He said all things looked green, and this perversion of sight finally deepened into blindness. His mind was yet clear. In a short time he lost consciousness, gradually his mind wandered, and he became comatose. An hour after this he died without a groan.

In the *New York Medical Journal* for 1875, p. 602, Dr. A. McL. Hamilton gives the history of the following case: A woman after taking a dose of cod-liver oil swallowed about half an ounce of the oil of wintergreen, being unaware of its properties. She complained of dizziness and drowsiness in the course of an hour, and this was followed by marked delirium. An emetic was given, and she vomited freely. Her pupils were contracted. Her extremities were cold, and her respirations were labored and quick. She complained of intense cerebral pain, and "noise in the ears" like the "buzzing of bees." She also had disturbed vision when she was not delirious, and also hallucinations of sight and of hearing. She had an irresistible desire to sleep, and was only prevented from doing so by the use of strong currents of electricity. A peculiar condition was a hemiparesis of the left side, with a notable loss of power.

Beck, in his work on "Medical Jurisprudence," mentions the cases of six soldiers who drank a tea made of andromeda, gaultheria, and ledum, and who suffered from vomiting, cold sweat, vertigo, and weakness, and one of them became insensible. These cases were hardly those of pure and simple oil of gaultheria poisoning.

The only symptom which we have seen produced by the largest therapeutic doses of oil of gaultheria have been those of mild cinchonism, or, in other words, those which are produced by therapeutic doses of salicylic acid.

Dr. N. A. Randolph and Mr. S. G. Dixon, of the University of Pennsylvania, found that the oil of gaultheria is readily absorbed when applied to the skin, or when inhaled from a sponge held in such a way that it did not touch the surface of the lips and chin, and that it appeared in the form of salicylic acid in the urine from forty to fifty minutes after the inhalation was begun.

We have experimentally confirmed this liberation of salicylic acid in the human system. The question arises whether all of the ingested oil is changed into the acid. To answer this question the following tests were made: One thousand cubic centimetres of the urine of a man who was taking 10 minims every three hours of the drug was distilled; another thousand cubic centi-

metres was shaken with sulphuric ether, and allowed to stand. As soon as the ether had thoroughly separated it was pipetted off and filtered, for the purpose of getting rid of the mucus and phosphates. In neither examination could unchanged oil be discovered. We next treated with ether, in the manner just described, one thousand cubic centimetres of the urine of a patient who was taking 200 minims a day of the oil, and failed entirely to discover a trace of unchanged oil. It must therefore, we think, be concluded that therapeutic doses of oil of gaultheria are entirely changed into salicylic acid in the system. Analogy certainly indicates, however, that when large toxic doses of the oil are taken a portion is altered in the system and a portion allowed to escape unchanged.

As the oil of gaultheria appears to act upon the system in the same manner as does salicylic acid, it becomes a matter of interest both practical and scientific to determine the equivalent doses of the two, or, in other words, how much of the oil we must administer to get the effect of a given quantity of the acid. About ninety per cent. of the oil is composed of the so-called methyl salicylate, having the formula $C_7H_5O_3CH_3$. This methyl salicylate is a substitution compound in which one atom of the hydrogen of salicylic acid has been replaced by a molecule of methyl, CH_3. The formula of salicylic acid is $C_7H_6O_3$; of methyl salicylate, $C_7\left\{\begin{matrix}H_5\\CH_3\end{matrix}\right\}O_3$.

In the animal system it would appear that one atom of carbon and two atoms of hydrogen in the methyl are removed by oxidation, and $C_7\left\{\begin{matrix}H_5\\CH_3\end{matrix}\right\}O_3$ becomes $C_7H_6O_3$.

Now $C_7\left\{\begin{matrix}H_5\\CH_3\end{matrix}\right\}O_3$ has an atomic weight of 152, while the atomic weight of $C_7H_6O_3$ is 138; so that the administration of 152 grains of the methyl salicylate ought to be equivalent to the giving of 138 grains of salicylic acid.

As 169 grains of the oil of gaultheria contain 152 grains of the methyl salicylate, they should be equivalent to 138 grains of salicylic acid.

ACUTE YELLOW ATROPHY OF THE LIVER.

By Jos. X. Ziteke, M.D., Batesville, Ind.

THE yellow atrophy of the liver is proportionally one of those rarely-recognized diseases of which but few records comparatively come down to us in medical literature, if compared with those about other maladies to which human flesh is heir. Still, it appears to me that in reality the disease is not so rare as it seems, and that many cases which came to the observation of the physician were sometimes either misunderstood, ignored, or falsely classified, so that the profession in general is virtually obliged to rely chiefly upon those cases which were observed in the clinics of large hospitals, or upon those which were reported by the most prominent men of the profession as having occurred in their practice.

And, in fact, if we consider the general and particular symptoms of this dangerous—indeed, often fatal—disease, which in their first stage creep slowly in without any special characteristic signs, often even assuming the well-known features of other less dangerous pathological processes; further, if we reflect how seldom it is possible for a small town or country practitioner to confirm his diagnosis by a pathologico-anatomical dissection, it is hardly to be wondered that many a case of acute yellow atrophy of the liver is wrongly diagnosed and falsely classified in the statistical reports of the country.

In spite of this fact, however, the disease seems to have been well known to the fathers of medicine, for not only did Hippocrates and Galen classify it as a disease *per se*, but even many of the monastic authors of the middle ages, who practised extensively both medicine and surgery, bear testimony to its existence, its widely-separated nature from other diseases of the liver, and its rapid and deadly termination.

It was a great and not uninteresting surprise to me to find Albertus Magnus, the great Dominican naturalist, mention the disease in his extensive work, "De Naturalibus." He says as follows: "Ante omnibus est antem quidam morbus Hepatis, etsi aliquando consecutus Ictero tamen valde differcus a consuetis morbis ejusdem organi; morbus valde periculosus vitæ, et propter cursum celerrimum, et propter febrim acutam cerebri, ipsum terminantem. Videter antem doctis in medicina, hepatem in isto morbo, aut naturam, aut accidentia mutari, aut in forma ipsa transformari." (*De rebus Natural.*, vol. ii., Augsburg edition, 1585.)

A similar opinion is also expressed in a work of later date, written by Archbishop Albik, M.D., of Prague, physician to the German Emperor Wenceslaus IV. Here also the disease is considered as a special disorder

of the liver, dangerous on account of its rapid course and violent brain fever. (De morbis corporis humani Magistri Albici, professoris medicinæ in Univers. Pragensi, 1495.)

Similar testimonies can be found in the writings of French and Italian physicians of the following centuries (see Verceloni, Baillou), who described the disease as a special and "Inæ naturæ forma Icteri," and who again were followed by other writers of the same opinion, till in the first two decades of our century the general attention of the profession was attracted to its study by the masterworks of Abercrombie, Brien, Alison, and Bright.

Later, Budd and Rokitansky treated of the same subject, till finally Frerichs, Liebermeister, and Klebs made the disease a subject of general discussion in the profession. Nevertheless, in spite of the many eminent men engaged in the study of this malady, no positive, final, and decisive judgment was rendered, partly because some considered it as a mere local disease of the liver, whilst others considered it a mere symptom of a general constitutional malady of the whole organism.

During a practice of more than ten years there came but two cases of this disease under my observation, and these I dare to submit to the general consideration of the profession, conscious but too well of the dangerous ground upon which I am treading:

Case I.—Mrs. A. M., married, mother of three children, 32 years of age, middle size, black eyes and hair, sallow complexion, firm bones, moderately well nourished, wife of a farmer in Spencer County, Indiana, born in Southern Germany, called to consult me in the year 1876. According to her own statement she remembers to have been sick but three times during her whole life; twice during the time since she was married. In her first sickness she suffered from cough, pain in the lower portion of the right side of her chest, had difficulty in breathing, was constipated, had no appetite, and her face and skin became of quite yellowish, dirty color. Was treated by a country doctor, who considered her case a consumption, and gave her many remedies, but without any relief. Finally she went to Cincinnati to consult Prof. Reamy. She remained in the city for six weeks, and returned home cured. She does not remember what the doctor called her sickness, but she was positive that he said there was no consumption.

From that time on she felt well till she became once more pregnant. At that time all the former symptoms reappeared, and grew worse the further she progressed in her pregnancy. She had taken many remedies again, but without any benefit.

Finally she was delivered of a sound child. The labor was slow, tedious, and painful. But the physician who attended her was in no hurry, and left well alone. Hence she was delivered of a girl baby without any instruments, and with but little internal medicine, which the doctor gave her after the birth of the child.

Her recovery was very slow and very incomplete. Her bowels were yet constipated, and her skin still a little yellow. Finally she determined to start for Cincinnati again, when one of her many sympathetic friends gave her a bottle of a patent medicine which a peddler left at her house, and which promised on its label to cure nearly all the ills to which human flesh is, and ever will be, heir. She took several doses of the medicine, which purged her quite acutely, and after a few weeks of self-treatment she felt better, and the yellow color disappeared from her face.

At present the patient is again pregnant, and, according to her reckoning, in the fifth month. Her pulse is weak, her tongue covered with a dark yellow crust; her appetite is good, but she cannot eat, as she has great pain in her stomach after taking nourishment, and if she eats in spite of it she throws the food up quite undigested. Auscultation and percussion reveal dulness about a half-inch below the right costal arch, and dulness in the lower portion, on both sides of lesser curvature of the stomach. Sounds of the heart normal. The urine is spare and of dark color. Chemical test reveals but little of albumen, no sugar, no blood, no leucin nor tyrosin, but biliverdin. Specific gravity 1.027. Reaction decidedly acid. The pulse changed its type three times within one hour she stayed with me. Sometimes it was weak and thready, again it became quick and double-beating, and again very slow. The changes in the pulse can be seen on her face, which flushes at times, and resumes again its yellow dirty tint.

Further, she states that towards the evening her face begins to flush, and that many days in succession she cannot sleep on account of headache in the temporal and parietal region.

The expression in her eyes corresponds to the change observed in her pulse. At times they become quite wild and fiery, at other times they seem dull and have a far-away expression.

The bowels were constipated for days, and no pills could regulate them. She took as much as ten pills at once, and though she had three or four evacuations next day, they became as obstinately inactive within the next forty-eight hours. And again she would be constipated for three or four days, when suddenly diarrhœa would set in, last for a day or two, and be followed again by constipation.

As to her genital organs, they were normal; no prolapsus, no version or flexion to be detected. No sensitiveness in the ovarian region. At times of her menstrual period she used to be sometimes troubled with leucorrhœa.

Such was the *status præsens*. As to diagnosis, I cannot say that I was able to settle the matter with myself satisfactorily. I saw that there was a liver-disease here,—but which, that was the question. However, the continual use of nitro-muriatic acid internally, and of podophyllum, exchanged sometimes for hydrarg. chlor. mite, produced on her quite a beneficent effect, and after six or seven weeks, during which she was rapidly improving, I lost sight of her.

One important fact, however, I cannot pass over, namely, that whilst examining her carefully it seemed to me that her pregnancy was further progressed than she thought, and that the menstrual flow which she professed to have seen some four months ago may have been one of the unsure and ever-vacillating will-o'-the-wisps which deceive many a pregnant woman as to her real state.

Some five months later Dr. W. called on me, with the request to accompany him to a sick lady whom he had delivered some eight weeks previously, and who had afterwards contracted puerperal fever, from which she had recovered about eight days ago.

According to his statement the labor had been long and tedious, and, as the patient was growing weaker every moment, he thought it necessary to terminate it by the use of the forceps. About forty-eight hours after the birth of the child the first symptoms of puerperal fever set in, though no antiseptic precaution—*i.e.*, as it was used in those days—was neglected.

During the whole length of the fever he and another physician of the village had attended upon her day and night, and both of them proclaimed it as one of the most severe cases from which they had seen a woman recover. Indeed, it seemed strange that a woman who had suffered so long and so much during her pregnancy should have resisted the deadly attack of a fever to which many hundreds of stout and robust women fall victims.

Since the last few days of her recovery, however, another set of symptoms appeared, which caused considerable alarm both to the friends and the attending physicians of the sick woman. It was for this reason that the doctor wished me to see the sick lady with him. The history of the case, as given by the doctor, was as follows:

It was about on the fifth day of her convalescence that shortly after dinner she was seized with nausea, which was followed by a copious vomiting. After the ejection of the nourishment a quantity of dark-greenish fluid followed, which formed a brownish sediment in the vessel. Two rather watery evacuations of the bowels followed a short time after the vomiting, of very pale color, and mixed with numerous kernels of the same dark tint. At the same time she complained of great pain in her head, was restless and excited, and again stupidly quiet. Spasmodic contractions both of the lower and upper extremities were noted.

Such were the symptoms given to me on our way to the patient. The *status præsens*, as observed by me, was this:

The patient was lying in a comatose state, from which, however, she awakened from time to time, and uttered a kind of inarticulate or again piercing cries. The skin was dry, of dark color, as well as the conjunctiva bulbi.

The pulse was irregular and weak; very quick, 156 per minute.

The tongue was coated with a dark fleshy fur; also her lips and the mucous membranes around the frænulum labii inferioris were covered with similar sordes.

The temperature was 104.5°.

The urine was of dark wine-color, with a similar sediment. Chemical test revealed no albumen, no sugar, but biliverdin and tyrosin.

Pectoral examination revealed bronchial fremitus, whilst the dulness over the lower portion of right sternum was nearly gone, but could be observed at the back, about one and a half inch from the spinal column.

Such was the state of the patient. My diagnosis was atrophia hepatis acuta. Prognosis, death.

Twenty-four hours after this my first visit to the patient, whilst on my way to see her again, I heard that she was dead. Yet as she had been about four days ago on a fair way to recovery, her husband, a bright German, gave a willing permission for a pathologico-

anatomical examination of the chest and upper part of the abdomen of the body, which examination was performed the same evening.

The most important facts detected were these:

Lungs show signs of recent bronchitis. Heart normal. Liver sunk back near the spinal column and covered with the bowels; considerably diminished; of soft and yellowish color; the capsule ragged.

The gall-bladder filled with a greenish fluid; also the ductus choledochus and the neighboring portions of the small intestines. The mucous membrane of the lower portion of the intestines covered with dark reddish patches (hemorrhagic ecchymoses, or what the French call *plaquès hemorrhagiques*).

The end of the colon transversum and descendens were filled with a whitish, hard mass of excrement, some portions of which, however, were of light yellow color.

In the stomach, near the pylorus, were the same hemorrhagic metamorphoses and yellowish fluid.

The spleen was enlarged, of whitish tint and soft consistence.

The kidneys soft and shrunk together, and in some portions degenerated.

CASE II.—S. W., 37 years old, male, of German parentage, born in Pennsylvania. Entered the army when eighteen years old, and served to the end of the war. His bodily build was strong and muscular, and a little inclined to adipous formation. After the war he married and opened a saloon. Says that he was never sick before, except once whilst in the army, where he had contracted a hard chancre, which was followed by inflammation of the inguinal lymphatics. Some time after the cure of the local evil he was attacked by a kind of rash, which appeared on his extremities and chest, for which he underwent treatment by the old German method of mercurial inunctions. After eight such inunctions he was cured. Since that time he had been always well, had two children, one of which died from some brain-trouble. The other is alive and healthy. Like nearly all German-Americans, he was a drinker, but with a decided relish for whiskey, which he preferred to the beer of his fathers.

His present trouble dates back about fifteen months, when he acquired what he called dyspepsia. He could not digest his food, and was troubled with vomiting, chiefly after breakfast and dinner. Had pain over his stomach, and often an internal griping pain, which began below the os xyphoideum and spread all over the abdomen, from which it would sometimes even go into his feet, producing a painful crampy sensation.

His dyspepsia continued to trouble him more and more, and, though he professed to have used all kinds of drugs prescribed by doctors and advised by friends, he grew worse rather than better. Since some months his bowels became decidedly inactive; his ejections had a very bad smell, and were of whitish color. The taste of his mouth, chiefly in the morning, was quite sickening, so that he could not help vomiting. His tongue and lips were coated by a kind of brownish rash or fur. The conjunctiva bulbi had a slight yellow tint; the eye itself a dull and melancholic expression.

The results of a physical examination were as follows: The lungs revealed in the apex of the right lung bronchial breathing and slight crepitus, resembling the râle muqueux; the heart normal. Stomach bloated, enlarged, yet quite elastic on pressure; no strong pain. Liver enlarged about half an inch over the costal arch; spleen in the same condition, and very sensitive to the strokes of the percussion-hammer. Pain in the back corresponding with the frontal hepatic region, and going up to the angle of the scapula.

Pulse full and quick, 95 per minute.

Urine not examined.

He was told how necessary it was for him to abstain entirely from all alcoholic drinks, and was put on a treatment by nitro-muriatic acid, and in order to regulate his bowels a mixture of iris vers., taraxac., and podophyl. was given.

He returned about two weeks later in an improved condition. The same treatment was continued, and the same advice repeated as a *conditio sine quâ non.*

Eight weeks after his second visit, the icterus had entirely disappeared, the bowels became active if not regular, and the patient was dismissed with the same advice as given before.

About six months later I was called one evening to his house, the messenger reporting him very bad; in fact, he was not expected to live. The miserable habit of years, which was digging his very grave some months ago, had again prevailed upon him, and in spite of his knowledge of the consequences he indulged in it freely. The promise he had given me to sell his saloon he had never kept, or perhaps never intended to keep at all, for there are yet some men so stupid who consider it a good joke to lie to their physician, as if a man

could commit a greater foolishness than to speak untruth to his doctor or to deceive his wife.

Having thus fallen back to his daily drink of whiskey, the dangerous symptoms returned one by one, but in another form and intensity, and in spite of pepsine, lacto-pepsine, gentian and rhubarb, colocynth and mercury, administered by a friendly physician and fellow-drinker, they became worse and worse, till they confined him to bed. The period in which the first symptoms appeared again to the day when he took to his bed was about ten to fourteen days.

Status præsens.—The patient had evidently lost flesh; he was still a muscular man, but his powerful, bony frame was all that struck the eye of an observer. His skin was of slightly yellowish color and entirely dry, hot dry, so well expressed in the *chaleur mordant.* The tongue was coated with a brown-blackish fur, forming nearly a membrane all over the tongue and lips. His breath was sickening; indeed, the whole room was full of a nauseously offensive smell. From time to time he was subjected to pain in the stomach, and then vomited a yellowish watery fluid, which formed a brownish sediment in the vessel. The smell of the vomited matter was decidedly acid.

His bowels were again constipated, and though he had taken the previous night ten Ayer's pills, he had no operation till an injection, consisting of sulph. mag., ole. rici, and a little ol. terebinth., was given.

He complained of excruciating pain in his head, chiefly in the temporal and occipital region, which went down like a knife to his neck and back. There was also evident twitching in the muscles of the lower extremities and abdomen. Sometimes he fell into a kind of stupor, from which he awoke in a few minutes shrieking and talking the wildest nonsense.

The abdomen was bloated and very painful to pressure. The pulse was 140 per minute. Temperature, 105°. The heat was characteristically dry.

The urine contained very slight traces of albumen, but large quantities of leucin, also cholic acid; specific gravity, 1.027; reaction acid. The sediment in the chamber-vessel was of green-yellowish color.

Auscultation: percussion gave evidence of a chronic bronchial catarrh of the lungs, a normal heart, but the hepatic dulness considerably smaller than before. Pain very severe on pressure.

The abdomen and lower extremities were covered with about ten large petechial spots resembling roseola of typhoid fever.

Such was the state of the patient as found that evening, and such it remained for the next two days,—*i.e.*, till his death.

Though it was possible to procure him some ease by a copious evacuation from his bowels, of a clayish hard, and later, yellowish, sticky substance, though the frequency of the vomiting was also diminished and his temperature lowered to 101°, yet it was impossible to keep it down; even in spite of the increased doses of antipyretics it reached shortly before his death 106°.

The delirium continued steady for the whole two days, and on the third—*i.e.*, the day of his death—it gave place to a comatose stupor, from which it was impossible to arouse him.

The icterus grew darker in shade, and after death became more of a green than of a yellow hue.

Several hemorrhagic spots were found upon his back.

No post-mortem examination was made, as his wife would not allow it.

My diagnosis was atrophia hepatis acuta, based chiefly on the vomiting, the great headache, the restlessness, somnolence, and finally the delirium, accompanied by spasmodic twitching in the extremities and abdomen.

The changeable pulse, the dark fur covering tongue and lips, the leucin and cholic acid in the urine, the diminished hepatic dulness, all this speak for my diagnosis, whilst the steady high temperature for three days, and perhaps longer, seems to be quite out of the common.

It is, therefore, relying chiefly upon the symptoms enumerated, that I based my diagnosis, and for that very reason I do not submit it to the profession with a self-important and conscious *magister dixit*, as seems to be a fashion of our days, but trust it to the kind criticism and private judgment of each member of the profession.

However different from each other these two cases may have been, they contained still both some symptoms which, in themselves, must necessarily attract the attention of every judicious physician.

1. A previous or several times repeated icterus, which was the precursor of the fatal illness in both cases, though more than four months in the first, whilst about seven months intervened in the second case.

2. The gastric symptoms, which very often

are considered as dyspeptic, chiefly in drinkers and in malarious districts.

3. The color, test, and specific gravity of the urine, and above all the presence of tyrosin in the first, and of leucin and cholic acid in the second, case, which are hardly ever found in another kind of liver-disease, but which are always, either one or both, present in the acute atrophy of the liver. (See Frerichs, Collingworth, Rokitansky, and Klebs.)

ON THE TREATMENT OF HEMORRHAGIC MALARIAL FEVER.

By Dr. R. H. Day, Baton Rouge, La.

IN recent years much has been written about malarial hemorrhagic fever, or malarial hæmaturia, and its treatment; but so discordant is medical opinion as to its essential nature, and so diverse the plans of treatment recommended, that to-day the disease and its treatment are shrouded in confusion and uncertainty.

I shall limit myself in this short paper to its treatment only, premising, however, that unless a correct knowledge and comprehension of its real nature, and the pathological changes wrought in the system by it, be had, its treatment must remain vacillating, uncertain, and empirical.

Having, from my first entrance into the medical profession, been thrown into highly-malarious districts of country, it was my fortune early in my medical career to become familiar with this most terrible disease, both in its mild and most virulent forms. What I have to say, therefore, about it is predicated upon a long, personal, and practical experience, and will have, at least, the merit of freshness and personality.

I think the chief obstacle in the way of its correct treatment consists in the fact that it is too commonly looked upon as a disease primarily of the kidneys, and the other lesions as secondary thereto; whereas it is emphatically an hepatic and blood disease of malarial origin, no case ever occurring except in persons presenting in the most marked and expressive manner the evidences of unmistakable malarial toxæmia. How the malarial poison acts upon the human organism to bring about these pathological changes it is not my purpose now to investigate, but simply allude to them to make the course of treatment which I have found most successful rational and intelligible to my readers.

As a matter of course, the treatment must somewhat vary according to the stage of the disease when first seen, and to the type of the disease, whether mild or of a grave form; for it must be borne in mind that, like all other diseases, it has its different grades of severity or types. If the disease is mild in its outset, characterized by decided intermittence in its symptoms and the presence of red blood-corpuscles in the urine, or, what is sometimes the case, the hemorrhage is from the bowels instead of by the kidneys, it will indicate that the blood is less profoundly altered, and we may confidently expect an easy triumph over the disease. Here a few small doses of calomel combined with opium and bicarbonate of sodium to stimulate the biliary secretions, followed by efficient doses of quinine, will very promptly break up the chain of morbid actions and place the patient in a state of convalescence. When, however, the type of the disease is grave and violent, which is more often the case, the stomach will be greatly nauseated, with frequent retching and vomiting of a greenish fluid filled with mucous flocculi, the pulse small and feeble, skin cool or cold, with pronounced chill or shivering and frequent emissions of bloody urine, apparently (really) disintegrated blood, destitute of any red blood-corpuscles, but abounding in the débris of the decomposed blood. Under these conditions we have no time to parley. Here decision and promptitude must mark our course. We must at once apply over the epigastrium and liver a blistering plaster, give a hypodermic injection of morphine, from ¼ to ½ gr., and repeat after one or two hours. If the stomach is not quieted and reaction established, give 3 to 5 grs. of calomel with bicarbonate of sodium every two to three hours till enough has been retained to act with certainty upon the liver (generally 15 to 20 grs. suffice). If the calomel does not move the bowels after a reasonable time, say four to five hours after the last dose of the mild chloride, administer enemas of warm water containing a tablespoonful of camphorated oil every hour or two till the bowels have been gently evacuated. If the stomach is still troubled with nausea, give a drop of creasote, made into an emulsion with bicarbonate of sodium and a small quantity of morphine, with aqua menthæ every one or two hours *pro re nata*, and as soon as a bilious discharge has been had from the bowels or reaction established, commence with quinine, either by the stomach or by hypodermic injection, in from 5 to 10 gr. doses, for its specific effect in counteracting or ar-

resting the malarial toxæmia, and push it to its systemic manifestation; generally from 30 to 50 grs. will be quite sufficient. As soon as the function of the liver is restored or appreciably aroused, and enough quinine has been introduced into the system to make its physiological effect manifest, commence to give the muriated tincture of iron in full doses, 20 to 30 drops every four hours, with the object of toning up the debilitated blood-vessels, reconstructing and vitalizing the hæmoglobin and red blood-corpuscles, thus endeavoring to restore the normal and vital condition of the blood.

If the kidneys should fail to act or work feebly, frequent frictions over the back, with a liniment composed of spirit of turpentine, tincture of digitalis, and whiskey rubbed in warm, will often be found efficient in stimulating them to action. Sometimes the administration of spirit of turpentine inwardly in 3 to 5 drop doses may be needed to supplement the liniment frictions in hastening the resumption of functional activity of the kidneys.

Such have been my guiding principles and course of treatment of this disease; and so well satisfied am I with the results that I can with confidence commend the same to any physician who may encounter in his practice this very serious malady.

ON THE TREATMENT OF SCIATICA AND NEURALGIC AFFECTIONS BY CONGELATION WITH METHYL CHLORIDE.

By Henry B. Millard, M.D., A.M., etc., New York.

DR. J. M. Debove, of Paris, in the *Gazette Hebdomadaire*, August 15, 1884, described a method of treatment, first employed by himself, of various neuralgic affections, particularly sciatica, by the local application of the chloride of methyl (*not methylene*). I have seen various accounts in medical journals of this method, but most of them very brief, and none of them indicating a real knowledge of it.

Being in Paris the summer of 1884, when Debove first employed this treatment, I passed considerable time with him at the Hôpital des Tournelles (Hôpital Andral), of which he is the physician-in-chief, and at the Hôtel Dieu, where he was temporarily filling the place of Dr. Germain Sée, observing the effects and method of treatment.

Dr. Debove in the article above referred to says, "Revulsives appear to act in sciatica in exciting the nervous extremities of the affected nerve, but the number of nerve-filaments excited is always limited; it is impossible indeed to apply a blister which extends from the hip to the calcaneum, or to cauterize the entire surface of the limb.

"I thought that this revulsion could be obtained in a different form by congealing the skin, for congelation may be effected and the skin regain the integrity of its functions. There seemed no objection to trying this, for the worst accident would be the production of a slough (*eschar*), which in the case I intended to apply it did not seem of great moment, as the treatment of sciatica by the cautery has become classical."

The *chloride of methyl*, Ch_3Cl, is a gas which is rendered liquid by pressure. This product is extensively fabricated in Paris by heating trimethylamine, which in its turn is made from the *vinasses*, the spent wash of the stills in which the molasses of the beet-root is distilled in the production of alcohol. It is much used in laboratories for the purpose of producing intense cold, and in freezing pathological specimens. When placed in an open vessel it boils at a temperature of —23° C. (=—11° F). It is not explosive, and in strong cylinders can be transported without danger. In France it is sold at six francs the litre.

Dr. Debove first employed a strong glass siphon, filled from a leaden retort containing the liquefied gas; the liquid is liberated by turning a screw at the top, through a flexible leaden tube with a finely-perforated brass point, by which it can be directed upon the affected part. The liquid on being liberated becomes at once volatilized, and escapes in the form of a very fine spray. Dr. Debove has tried to produce the same effect with a Richardson's apparatus, but ineffectually. Within the last year, Galante has manufactured a strong copper siphon which is absolutely free from danger, as it cannot be broken.

The liquefied gas directed upon the skin produces immediate whitening and hardness by congelation; these two effects disappear almost immediately, the skin becoming red and hot. To quote from Debove: "The jet of methyl chloride is directed upon the skin of the entire region which is the seat of pain, in sciatica from the sacrum to the malleolus." Patients experience a burning sensation, which is painful, but in no wise comparable to that produced by cauterization by heat, nor is it of long duration. No dressing is necessary. Practically, the effect is the same as that of an extensive, superficial, and rapid cauterization

without vesication, or destruction of the epidermis.

I have seen Dr. Debove use it very freely on a part to ascertain if a sphacelus could be produced. He has informed me, however, that he has never known it to produce such a result. The worst effect he has observed, and that but rarely, has been slight vesication. Two or three cases have, however, been reported in Paris where erysipelas followed. Dr. Debove informs me that he is unable to comprehend this, as in his own practice he never has observed any ill effects. It may be that in the cases referred to it was applied to loose tissues, or that the systems of the patients were impoverished.

This treatment is not suited to all forms of neuralgia, as, for example, not to that having a syphilitic origin; it is most applicable to those cases having a rheumatic basis. "My first patient," says Debove, "was affected with sciatica neuralgia, and had been treated in vain for various attacks by the actual cautery, and had not been helped under my service by a month's rest in bed. I applied the jet of chloride of methyl over the entire surface affected, from the hip to the external malleolus. A minute after this patient, who had not been able previously to set his foot to the ground, walked without limping, declaring himself cured. He was quite stupefied by his cure; I confess my own astonishment was not less than his, but I was well aware that marvellous therapeutic results are often a mere coincidence or are due to the imagination, and that further trials on the part of the physician are not always attended with similar success. This is especially true of sciatica which has been cured by the simple cauterization of the lobe of the ear. Thanks to the frequency of the disease in question, I have been able to make further trials, and I can state to-day that the effects of the treatment have been constant and instantaneous.

"I cured the first case three months ago, and up to the present time there has been no relapse. My other patients were either cured at once, or have had light relapses, immediately yielding to the application of the methyl. These patients suffered from simple sciatic neuralgia, of the form known as rheumatic. Their affections had existed from two weeks to three months, and they all suffered so much that they could not put their feet to the ground."

The following cases I myself saw treated, conversing with the patients and examining the records of their cases.

Hôpital des Tournelles. — Robert, æt. 49. Sciatica of rheumatic origin of six months' standing. Almost entirely cured by two applications, each one being followed by instant relief.

Male patient, æt. 50. Acute sciatica nearly cured by three applications.

Male patient, æt. 31. Sciatica of fourteen months' standing. Disappeared almost entirely after one application.

Male patient, æt. 50. Intercostal neuralgia of seven months' standing cured by one application.

Hôtel Dieu.—Man, æt. 40. Sciatica which has existed about eleven months. Nearly cured by a single application.

Paul Bonvert, aged 30. Sciatica of a year's standing cured by one application.

Thirry, æt. 37. Sciatica for six months. Had been treated by the actual cautery. Cured by one application of methyl chloride.

There were a number of other cases of a similar character which fell under my observation. As to whether what I have designated as a "cure" in these was a radical one I had from my own observation no means of knowing. Dr. Debove afterwards informed me that these cases seemed perfectly cured, though relapses might occur. The effects of the application seemed indeed, in some cases, like extraordinary feats of magic. A patient would be recumbent from pain to such an extent as to make movement of the affected part practically impossible, and immediately after the application of the spray would be able to walk with facility. It seemed to produce local anæsthesia without loss of power. And yet cures of sciatica by a single operation with the cautery or otherwise are possible. I myself have effected them in one or two cases, and one of my patients, a delicate girl, who suffered agony which could be relieved only by almost dangerous hypodermic injections of morphine, was cured by a single application to the sciatic nerve of the galvanic needle.

That the methyl chloride used as employed by Dr. Debove may be of the greatest value I fully believe. Especially could it be made to take the place, in many cases, of the thermo-cautery. It is less painful, it can be used with greater rapidity, and can be made to cover a large surface.

Owing to the impossibility, thus far, of obtaining the chemical in this country, I have tried to produce the same effect with petrolic ether,—rhigolene. With a Richardson's double bulb I have reduced in three or four minutes the temperature of water in a test-tube to zero,

and in five or six minutes have produced congelation of the surface. This, however, is a very slow process, especially when congelation of a large surface is sought, compared with the chloride of methyl, which almost instantaneously reduces the temperature to 11° F. below zero. Aside from the time consumed, the rhigolene does not produce so much blanching of the skin, and the heat and reaction after its use are less.

The cost of the manufacture of the gas and of the siphon here would be considerable. A glass siphon even, properly made, would cost not less than fifteen dollars, in Paris the cost is twenty-seven francs, and is inferior to the copper siphon, which alone, I think, should be used, as being absolutely free from danger.

I present this mercantile aspect of the subject with other details, because I hope yet to see the chloride of methyl extensively employed here. The price of the copper siphon holding two kilogrammes, made by Galante, is one hundred and seventy-five francs; the two kilos. costing twelve francs. The same firm has also constructed a copper cylinder with all the accessories for filling the siphon, etc., holding twenty-five kilos., the price being three hundred and fifty francs. The cylinder and the siphon, each filled, would then cost eight hundred and twenty-five francs. The whole imported here, with duties, etc., would, without allowing any profit to the importer, cost nearly two hundred and seventy-five dollars. So it is apparent, I think, that unless the chemical can be made here, the prospects of its being extensively employed this side the water are not great. I do not despair yet, however, of having its fabrication brought about here.

NOTES ON A CASE OF FÆCAL CALCULI.

By Davidson Scott, M.D., Spokan Falls, Washington Territory.

IN November, 1877, I saw a woman—aged 60, lymphatic temperament, married; occupation, housekeeper; native American—in consultation with the family physician. Had been suffering for two years from jaundice. Had suffered previously from attacks of bilious colic, which had, for the past year, become of daily occurrence. She had been large and fat, but was now much emaciated.

No bile entered the alimentary canal. All the fluids of the body were saturated with it; vicarious elimination was taking place through all the emunctories. The under-garments were literally dyed with it. It required no great amount of discrimination to diagnosticate mechanical obstruction of the common duct of the liver.

As I expected, palpation revealed a distended gall-cyst filled with gallstones. They could be felt "like marbles in a bag." Further examination revealed a number of hard bodies slightly movable, and doubtless within the transverse colon. *Diagnosis:* "Mechanical obstruction of ductus communis, due possibly to impaction from gallstones, but more probably to fæcal calculi in that part of the colon where it is in relation to the common duct of the liver." The hard bodies in the transverse colon I felt assured were fæcal calculi.

The patient was ordered to take, if possible, a pint of olive oil daily, to be continued until it produced free catharsis. The treatment was commenced next day, during which she took one-half pint, and on the second and third day thereafter a pint daily. The oil began passing the bowels (undigested, as I anticipated) on the second day, and on the third several fæcal calculi were evacuated, one of which was described as being as large as a walnut. The oil was continued some days without further result. She made a rapid recovery, in three weeks being able to come to my office in the city,—Oskaloosa, Iowa,—riding twelve miles by rail. At this time nearly all traces of the jaundice had disappeared. When last heard from, within a few months, she was still enjoying good health, having had no return of the disease.

A NEW POWDER-BLOWER.

By J. D. Kelly, A.M., M.D., Lowville, N. Y.

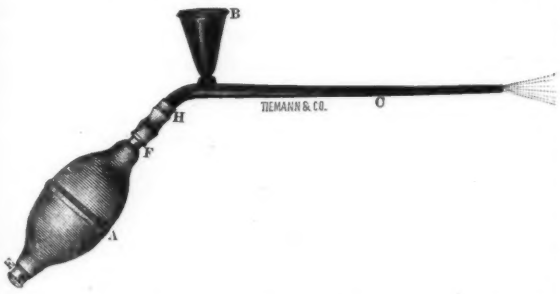
THE necessity of applying a medicamentum in the form of powder directly upon affected mucous surfaces is demonstrated repeatedly in every-day practice. In some affections, and under certain circumstances, no measure is so greatly in vogue and so confidently relied upon, and only the difficulty of its execution by the old methods upon affected surfaces in the oral, aural, and vaginal cavities detracts from its superiority over every other.

The application to surfaces in these cavities is often made by blowing the powder through a glass tube or a roll of paper, one end of which is held in the mouth of the operator. The danger, to say nothing of the inconvenience to the physician in so doing, is

often very great. About a year ago a physician in this place, while making an application of powder in this way through a roll of paper to a diphtheritic throat, contracted the disease, and in a few days his chances for life were trembling in the balance.

The powder-blower sold in the shops is so imperfect in its work and construction that it is seldom found in use. In it the bulb is compressible, but it is necessary to place the thumb over a hole in the side of the bulb as it is compressed in order to compel the air to escape by way of the tube, and thereby carry the powder with it. The bulb attached to the end of the tube and in line with it brings the hand when operating it directly in the way of vision, and so obstructs efficiency. The powder is dropped through an oval opening in the tube with considerable difficulty in charging it, and, upon compressing the bulb, it is all blown out at once, making necessary the delay and inconvenience of "loading up" again before proceeding in the application.

To overcome all such dangers and difficulties I had the following instrument made for me by Messrs. Tiemann & Co., of New York.



It consists essentially of three parts, viz., the bulb A, the reservoir B, and the barrel C. The bulb A is of soft rubber, and compressible. It is equipped with two valves, one at E and one at F, both opening in the same direction. The reservoir and barrel are of hard rubber, and are detachable at H from the bulb for packing or cleaning. The reservoir is closed by a cap, which screws closely down upon its top. To operate it the cap of the reservoir is removed, and the medicamentum in fine powder dropped in, of which in bulk it will hold quite a teaspoonful. The cap is then screwed on, and it is ready for use.

The advantages or superior qualities of this instrument consist, first, in the bulb A being below the line of vision, and so out of the way, thus enabling the operator to keep the affected parts in view and make the application with greater accuracy; second, in the facility of loading the reservoir and in the quantity it will hold; and, third, in the ability to make long continuous application without the trouble of refilling the reservoir.

It has proved in my hands very efficacious, and the facility of its operation will, I think, recommend it for general use.

ON THE INFLUENCE OF FEVER UPON THE ARTERIAL PRESSURE.

WIEGANDT communicates to the *Centralblatt für Medicinische Wissenschaften* of January 2, 1886, his observations made on fever-patients with the view to determine the arterial pressure before and after the administration of antipyretics.

Eighteen experiments made with kairine in typhoid fever (one in erysipelas) gave wholly negative results. Eighteen further observations with antipyrin (in cases of typhoid fever, pneumonia, erysipelas, pyæmia, and tuberculosis) showed important differences only in four patients, especially in the instances of erysipelas, tuberculosis, and pyæmia. In the two former instances the blood-pressure was found to be lowered, and in the latter raised, after the reduction of the temperature by the drug. In five patients (cases of typhoid fever, pneumonia, and erysipelas) who had received thalline, the blood-pressure fell only in erysipelas after the fall of temperature, while in the two other affections no change in the pressure was observed. The influence of defervescence upon the blood-pressure is consequently either wholly negative or only a very slight one.

Three observations made with cold baths gave, as was expected, very similar results.

LAUGHING-GAS.

That the so-called laughing-gas is after all not as innocuous a drug as possibly many dentists tell their patients, has recently been strikingly proven by the case of DR. DUCHESNE, of Paris, who had a patient die while under the influence of this anæsthetic. It will consequently be indicated to employ greater care in the use of laughing-gas than has been done hitherto, and to examine the patients to be anæsthetized as to a possibly existing cardiac defect.

The Therapeutic Gazette

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Leading Articles.

ACCIDENTS FOLLOWING THE USE OF COCAINE.

THE rapidity with which reports are appearing of various forms of accident following the use of cocaine show that this drug, like nearly all other valuable articles in our materia medica, is not entirely free from its disadvantages, and they point to the necessity which must be observed in the selection of cases suitable for the use of cocaine or to the more careful study of the conditions which should govern its application. Bunge, in the *Klin. Monatss. für Augenheilkunde*, vol. xxxiii. p. 402, reports three cases of exfoliation of the corneal epithelium after the instillation of a three per cent. solution of cocaine into the eye previous to an operation for cataract, while in the fourth case vesicular keratitis lasting for five weeks followed local applications of this drug. Bunge's experience appears to have been unusually unfortunate, as he further states that in six cases of cataract operated on under cocaine-anæsthesia he noticed parenchymatous cloudiness of the cornea, which in one case was intense enough to entirely exclude light from the eye.

Unfortunately, the experience appears to be very general as to the production of panophthalmitis after the use of cocaine either in solution or in gelatin disks, and at a recent meeting of the Clinical Society of London (*Pharm. Journ. and Trans.*, November 28, 1885) the majority of the members present seemed to believe that such a consequence was very frequently the result of the cocaine. Gräfe also states that he has found chronic interstitial keratitis much more common than before its employment.

It even appears that the instillation of cocaine into the conjunctival sac may produce symptoms of general intoxication. A number of such cases are recorded. Thus, Mayerhausen (*Centralb. für die Gesammte Therapie*, October, 1885) relates a case of a girl 12 years of age in whom 2 drops of a two per cent. solution were instilled in the conjunctiva four times, at intervals of five to eight minutes, for the removal of a portion of the cornea, injured and stained through a wound from a steel pen. In all only a little over $\frac{1}{10}$ of a grain was administered, of which certainly one-half must have been lost through the tears. Immediately after the operation the child commenced to complain of headache, which became more and more severe until it was almost unbearable. Nausea and vomiting persisted through the entire day. The patient was greatly prostrated; stumbled in walking, her speech was almost entirely destroyed, as though her tongue was paralyzed. These symptoms of poisoning lasted all through the night, in which no rest was possible, and gradually disappeared towards the evening of the following day. In commenting on this case, Königstein calls attention to the difference between these symptoms and those which are generally recognized as characterizing cocaine-poisoning, and he suggests their similitude to the symptoms of atropine-poisoning, and doubts whether the preparation employed could have been a perfectly pure one; while, on the other hand, he suggests that the operation on the cornea through reflex action from the trigeminal nerve might be sufficient to evoke the symptoms detailed above. It hardly seems credible that a cocaine preparation could be adulterated with atropine, and it seems to us that, in the present state of our knowledge of the physiological action of cocaine, we can hardly exclude the results above given from that action simply because they do not tally with the general ideas which we have now as to that action.

Dr. Ziem also reports a somewhat similar case, in which 2 drops of a four per cent.

solution of cocaine applied to the eye of a man caused symptoms of syncope (*British Medical Journal*, November 21, 1885). In a few minutes after the pupils had become dilated, the patient's face became pale, sweat broke out on his forehead, and his breathing became embarrassed. Dr. Zeim refers to seventeen other cases recorded in ophthalmological literature in which toxic effects followed the use of cocaine. In three it was injected hypodermically, and in fourteen it was brought into the conjunctival sacs. In some of these cases the symptoms were transient, and consisted of pallor of the face, giddiness, and sweating of the face and neck. In others there were dyspnœa, great feeling of prostration, malaise, and apathy, lasting sometimes for several days. Vomiting and headache have been rarely present. The subjects were in some cases feeble, aged women; in others they were strong and healthy individuals, both male and female. Dr. Heymann, in the *Deutsche Med. Wochen.*, No. 46, 1885, reports a case in which the symptoms following the use of cocaine very closely resemble those above reported by Mayerhausen. The patient was a boy, in whom solution of cocaine was liberally applied to the pharynx and larynx for the removal of a small papillomatous growth from the latter. Even before the tumor was removed the boy began to show signs of intoxication; he was apathetic, spoke in a halting, hesitating manner, and had considerable difficulty in walking. Pulse, temperature, and respiration appeared to have been all slightly increased. The symptoms gradually passed off ten hours after the operation. Dr. de Haviland Hall (*Lancet*, November 21, 1885) describes a case in which cocaine spray applied to the posterior nares caused laryngeal spasm.

It is, of course, as yet impossible to say whether these effects are due to idiosyncrasy, or whether they are caused by decomposition in the solution of cocaine. This solution, as is well known, is not a permanent one, and is particularly liable to the development of fungous growths, and we have already at various times referred to different methods of preserving cocaine solutions. Of course the best method is to make the solutions fresh when required. Mr. H. McHardy, who has often met with disadvantageous results from the use of cocaine, thinks that fifteen days is the longest time that it is advisable to keep the solution of cocaine. Gelatin disks containing cocaine are hydroscopic, and they also are not any more permanent or but little more permanent than the watery solution of the alkaloid.

In this connection a case of cocaine-poisoning very closely resembling opium-poisoning, and reported by Dr. J. S. Spear in the *Medical Record*, November 14, 1885, is of interest. The case was that of a man aged 29 years, who, after being on a spree, took a hypodermic injection of the cocaine solution, as he expressed it, to sober up with. About two hours afterwards it was noticed that his face was ashy pale, hands and lips quite blue, drops of perspiration covered his forehead and ran down his neck. His eyelids were tightly closed, mouth half open, pupils contracted, pulse feeble and fluttering and not countable, face congested and of a whitish-gray color, and the body bathed in a cold perspiration. Respiration slow and almost imperceptible, and not at all stertorous. A diagnosis of opium-poisoning was made and the stomach-pump employed, but the stomach was found empty, and $\frac{1}{80}$ of a grain of atropine was then injected, and strong coffee forced down the throat, the patient at the time being unable to swallow. Under flagellation, and possibly as the result of the above treatment, in about one hour and a half he showed signs of returning consciousness. After taking coffee several times he finally vomited it, and gradually recovered. He then gave the following history as to the details of the case:

His occupation is a hospital nurse in the U. S. Marine Corps, and he is addicted to the use of cocaine to allay a craving for alcoholic stimulants. On the afternoon of October 15 he left the barracks about two o'clock, went directly to the manufacturing laboratory of Dr. Edward R. Squibb, in Brooklyn, purchased two small vials, each containing five grains of muriate of cocaine in powder, dissolved the same by filling the vials with water which he obtained in a bar-room; he then crossed over to New York, had his hypodermic syringe repaired at an instrument-maker's shop, and about 3.30 P.M. gave himself the first hypodermic of cocaine, probably about 1 grain.

He had already taken several drinks, and continued to drink from time to time all night, going from one saloon to another. Every few hours he took a hypodermic of cocaine. He thinks he was not intoxicated at any time, is quite sure he did not spill any of his cocaine, but took it all before he returned to the barracks at 8.30 A.M., except the last portion, which he took in the cell as before related.

He declared most positively that he did not purchase nor take any morphine on this occasion, and indeed never took a dose of morphine in his life, and offered to make an affidavit to that effect. There was no evidence of suicidal intent. The purchase of the cocaine was confirmed by inquiry made at Dr. Squibb's laboratory, where it was stated that the same man had frequently purchased cocaine there before. The two vials with Squibb's cocaine labels on them, both empty, one corked, were found in the cell. Both showed unmistakable signs of having recently contained cocaine and not morphine. His own hypodermic syringe had been used to administer the atropine, so that an examination of its contents for cocaine or morphine was considered unreliable.

ON THE ACTION AND ELIMINATION OF IODIDES.

THE high repute which iodine and its preparations have enjoyed ever since the introduction of this metal into therapeutics by Curtois at the beginning of this century, rests almost exclusively upon an empirical basis. The physiological and experimental researches instituted with these drugs have hitherto shed but a dim and scanty light on the actual mode and nature of their efficacy. It is almost easier and shorter at the present day to enumerate the maladies in which iodine and its preparations are not ordered than those in which they are employed. This state of affairs is aptly illustrated by the well-known bon-mot appearing in the text-book of Nothnagel-Rossbach : "When the physician is at a loss what to do, he prescribes the iodide of potassium." Only a year or so ago the medical world received with surprise the authentic report of an entirely new pathological field for the curative power of iodide of potassium (*Progrès Médical*, October 4, 1884), Prof. Fournier, of Lille, publishing a case of genuine tubercular lupus which was cured solely by this drug.

Still, in spite of the uncertainty and even confusion which exists in our knowledge of the therapeutic virtues of the iodides, clinical experience has well established their high value in a number of morbid processes, among which deserve to be especially mentioned syphilis, hypertrophy of the thyroid body, scrofulosis, gout, alterations of the aorta and great vessels, asthma, chronic bronchitis, and albuminuria.

If, however, experience has taught us numerous indications for the employment of iodides, it has given us no insight into their *modus operandi;* we are, in one word, very rich in empirical facts, but very poor in rational notions as to these important remedies.

Regarded by some therapeutists as moderating agents of nutrition, by others as stimulants of the same, the iodides have in turn been accused of producing obesity and reducing it, of augmenting diuresis and diminishing it, of increasing the elimination of urea and decreasing it again. This conflict of contradictory opinions compels us to appreciate the thorough and strictly scientific study of Dr. Eugène-Louis Duchesne (Paris, Inaugural Essay, 1885) on the action and elimination of iodides, which we hereby present in its essential features to the readers of the THERAPEUTIC GAZETTE.

I. ACTION OF IODIDES ON DIURESIS.

Iodide of Potassium was administered in fifteen cases in doses varying from 7½ to 75 grs., and for a period of two to thirteen days, and gave the following results : In seven cases the urine was noticed to be increased slightly (2 to 8 oz.), and in one case greatly (30 to 34 oz.). In seven cases a slight diminution of the urine was observed during the period of the administration of the drug (2 to 7 oz.).

These variations move between such restrained limits and show such direct oppositions, that we are forced to assume that they are wholly independent of the influence of the drug.

Iodide of Sodium.—This drug was administered in one case in doses of 60 grs. *pro die* for a period of nine days, with the following results :

The urine increased 2 oz. during the period of administration ; in another case, where 30 grs. were given for six days, a diminution of 22 oz. was observed. During six days following upon the cessation of the drug, the diminution of urine amounted to one quart. It is hard to draw any definite conclusions from these contradictory observations.

Iodide of Calcium.—In two cases where this drug was administered in daily doses of 30 and 60 grs. respectively for a period of six days, a diminution of 5 to 6 oz. during the period of administration and during the following period was noted. We know, then, that the iodide of calcium does not increase urination, but rather appears to diminish it.

Iodide of Ammonium.—This drug administered in doses of 45 grs. daily for six days pro-

duced an augmentation of 4 oz. of the urine for the first three days of administration. During the fifteen days following upon the cessation of the drug, this diminution amounted to 14 oz. In another case, where 15 grs. was given for nine days, an increase of 24 oz. during the first four days, and a diminution of 5½ oz. during the five last days, was noticed. During the five days following upon the cessation of the drug the diminution amounted to 8 oz.

These two results go to show that iodide of ammonium augments slightly diuresis during the first few days of its administration, and decreases it later.

Polyiodides (KI, NaI, CaI, NH_4I).—In one case where the polyiodides were given for five days in equal and progressive doses of 15 to 75 grs., the urine decreased 20 oz. during the period of administration, and increased 4 oz. during the following five days. In a second similar case a diminution of 3½ oz. during the period of administration, and an increase of 39 oz. during eight following days, took place.

The combination of iodides appears thus to act inversely as the iodides alone,—viz., to diminish diuresis at the end of the administration of the drug, and to increase it during the days following upon the cessation of the drug.

Tincture of Iodine.—In five cases where the tincture of iodine was exhibited in progressive doses of 8 to 28 gtt. for a period of five to fourteen days, the urine increased in every case (excepting one) 4½ to 26 oz. during the period of administration. In the six days following in all cases (excepting two) a diminution of 10 to 28 oz. was observed. Hence we learn that the tincture of iodine increases urination at first, and then after cessation of the drug leads to a diminution of the urinary quantity.

II. ACTION OF IODIDES ON UREA.

Iodide of Potassium.—Under the influence of this drug urea was found to increase. This increase persisted, and even grew during ten or fifteen days following upon the cessation of the drug. These variations, though, are not great, from 30 to 45 grs. usually; they never exceed 120 grs.: in one case only the enormous figure of 210 grs. was reached. The dose, the mode of administration, and its duration, did not influence in any way these variations.

Iodide of Sodium.—This drug given in a comparatively large dose (60 grs.) produced a temporary increase of urea, which was soon followed by a notable decrease, lasting for several weeks after the cessation of the drug, and amounting to the enormous figure of fifty per cent.

Iodide of Calcium lowered quite appreciably the figure of the ureic excretion even for a period of two weeks after cessation of the drug.

Iodide of Ammonium raised the secretion of urea at the end of the administration of the drug, and lowered it during the following eight or ten days.

Polyiodides were found to decrease the excretion of urea during their administration, and to raise it during the period following upon the cessation of the drug.

Tincture of Iodine.—Out of five cases in which the tincture was given, our author records an augmentation of urea in four cases during the period of administration and during the following three days. His conclusion as to the effect of the tincture of iodine was that the latter had a varying effect upon nutrition as to the exhibited dose; in a dose of 16 gtt. and exhibited for a period of about a week, the tincture was found to exert a decidedly favorable effect upon the general nutrition. If, however, this dose be exceeded and the period of administration prolonged, the reverse condition—viz., a notable depression of nutrition—took place.

Action of Iodides on Uric Acid.—The iodides of potassium and calcium were found to slightly increase the excretion of uric acid.

The iodide of ammonium produced a considerable augmentation of the uric acid excretion, while the polyiodides lowered the same.

At the conclusion of his study Dr. Duchesne arrives at numerous interesting results as to the action of the iodides on nutrition and their mode of elimination, which we shall briefly refer to.

The iodides have but a slight action on diuresis.

Their influence is marked by a slight increase of the urinary excretion during the period of administration of the drug, and at times during the first few days of this period only. This increase is soon followed by a decrease, which persists for ten to fourteen days after discontinuance of the drug. Among the salts of iodine, the iodide of potassium showed the feeblest action in this respect.

The iodide of ammonium and the tincture of iodine act alike on the urinary excretion, increasing it during the period of administration, and reducing it immediately after cessation of the drugs.

The elimination of nitrogenous matters (urea and uric acid) is modified by both the salts and the tincture of iodine, though the various preparations do not act alike. Iodide of potassium augments the ureic excretion during the period of administration, and during the following ten to fourteen days. This augmentation, which is always 30 to 45 grs. daily, may amount to 105 to 120 grs. (exceptionally to 225 grs.). The tincture of iodine acts as the iodide of potassium, but more energetically.

All the preparations of iodine favor likewise the elimination of uric acid during and after the period of administration. Their association, however, and the tincture produce the opposite result. During and after their administration the uric acid elimination is decreased.

These observations show the impossibility of considering the iodides *en masse* either as stimulants or depressants of nutrition, as some favor the elimination of nitrogenous matters, as the tincture of iodine and the iodide of potassium, and others retard this elimination, as the iodides of sodium and calcium.

Therapeutically, we infer from these facts that, wherever an energetic action upon nutrition is intended by intensifying the process of nitrogenous elimination, the potash combinations, or still better the metallic salt, recommend themselves. Such indications would arise in all maladies attended by a weakened nutrition, such as stone in the bladder, gout, rheumatism, and others.

BISMUTH PREPARATIONS.

THE great difficulty which in the past has attended the therapeutic use of the salts of bismuth in large quantities has been their proneness to contain arsenic. We well remember having produced severe arsenical poisoning by the administration of a preparation of bismuth which had been made by one of the largest and most reliable chemical establishments in the United States. This liability to arsenical contamination grew out of the fact that the only bismuth ores formerly in use were those of central Europe, all of which contain arsenic in abundance. Since the discovery of ores of bismuth in South America, which are free from arsenic, the practitioner need not fear to use this drug in very large doses.

There are one or two therapeutic points in regard to the salts of bismuth which it has seemed worth while to call attention to. In the first place we hardly think that the bismuth preparations are employed as frequently as local remedies in inflammations of the mucous membranes as they deserve to be. They seem to us to be distinctly sedative, and at the same time slightly astringent, and may be used freely in the most acute stages of mucous inflammation. Thus, in the beginning of an acute nasal catarrh bismuth may be blown by means of a quill freely into the nostrils, often with great relief. If 5 grains of the carbonate of sodium be added to 2 drachms of the bismuth it will often be found serviceable. In gonorrhœa, during the most acute stage, injections containing 20 to 40 grains of bismuth suspended by means of some mucilage and repeated every two or three hours, sometimes act most advantageously.

As is universally recognized, these salts of bismuth are of great value in all gastric or intestinal irritations. When the stomach itself is affected, the bismuth should be given just before or immediately after the meal; the doses are not less than ten grains, the object being, of course, to have the bismuth retained in the stomach and brought in contact with the mucous membrane of the stomach as thoroughly as possible. In many cases it would be better to give the bismuth a half-hour before the meal. When it is desired to influence the mucous membrane of the intestines the bismuth must be given in much larger doses, 20 grains to a drachm; but especially is it desirable that it be administered about two hours after eating, when the contents of the stomach are rapidly passing into the intestines, in order that the bismuth may be hurried through the stomach as rapidly as possible and reach the intestines in an unaltered condition.

The remarks which we have been making refer to the insoluble preparations of bismuth, —the subnitrate and the subcarbonate,— which do not in any way differ from one another in their relations to the human organism. The soluble ammonio-citrate of bismuth is a very astringent and decidedly irritant remedy which, in our practice, has failed to prove itself possessed of any special value.

AN ABUSE OF VIVISECTION, BUT NOT BY PHYSIOLOGISTS.

AS our readers well know, we have taken occasion from time to time to protest against the false statements and the ranting rhetoric of antivivisection literature. It is to our mind

a great pity that so much of energy and so much of humanity should by its misdirection do evil rather than good. We sympathize most heartily with all properly directed efforts to reduce the amount of animal suffering in the world, and we would therefore suggest that our readers should call the attention of the various societies for the prevention of cruelty to animals and of humane individuals to the practical vivisections which are performed in private and public slaughter-houses in all portions of these United States with thoughtless or reckless brutality.

The slaughtering of animals is of course necessary; but death should be inflicted with as little pain to the animal as possible. When the throat of a sheep or a calf is cut, some minutes of psychical and physical suffering must ensue; since, even if both carotids be thoroughly divided, the vertebral arteries will suffice to supply enough blood to maintain more or less complete consciousness. Pithing of the sheep or of a calf would be a very simple operation, and would in no wise interfere with the free bleeding if the throat was cut immediately.

In the case of cattle, pithing is usually impracticable; and shooting, which is practised, we believe, in Chicago, is liable to cause serious accident. A properly-directed blow, given with sufficient force upon the front of the head below the horns, will cause an instantaneous loss of consciousness, and affords, unless under exceptional circumstances, the best means of killing. The difficulty is that the blows are frequently so bunglingly given that they have to be repeated time and again.

A recent inspection of the large building which, under the control of the Pennsylvania Railroad, constitutes the chief abattoir of Philadelphia, led to the witnessing of the sickening procedures there indulged in. Driven into open pens in crowds, maddened or cowed, according to the individual disposition, by the sight of their stricken comrades and the surroundings of death and blood, the unfortunate brutes, one by one, received the fatal hammer. Occasionally a deftly-delivered blow would cause the animal to fall paralyzed in all its nerve-functions; more often two, three, four, five, or even six times would the stroke have to be given, the animal falling to his knees, struggling up, trying to crowd his way among his fellows, only at last to perish. Then again, even when the steer had fallen unconscious, often was so long a time allowed to elapse before cutting the throat that the beast would regain sufficient power to feel, and sometimes even to get upon his feet.

A little of the eloquence displayed at a late meeting of the Antivivisection Society by the learned counsel of the Pennsylvania Railroad, whose knowledge of law, we trust, is as great as his ignorance of physiology and its needs, might be usefully employed in the furtherance of abattoir reform.

THE GALVANO-CAUTERY AS AN EFFECTUAL TREATMENT OF DIPHTHERIA.

THAT all therapeutic interferences at present employed in diphtheria play little more than a palliative rôle, without in any way modifying the diphtheric process itself, is unfortunately an indisputable fact with all clinicians and practitioners. To look for new remedies of the vegetable or mineral kingdom, or the products of the chemical laboratory, which might possibly exert a specific, or at least a salutary, influence over the affection, must at last appear a fruitless endeavor. Drugs do not and cannot cure diphtheria, and other measures must be thought of, unless we wish to abandon our patients wholly to the mercy of this dreaded foe. Almost simultaneously, and certainly independently of each other, the report of the successful exhibition of a new remedial procedure, viz., the galvano-cautery, comes to us from two different quarters. Dr. Bloebaum presented his experience with the galvano-cautery in diphtheria in a recent number of the *Deutsche Medizinal Zeitung* (p. 973, 1885), and expresses his unqualified satisfaction with the results obtained, while in the *Rivista Venet.* of November, 1885, we find a similar eulogy of this treatment by Dr. Tedeschi (*Communicazione Preventiva del Dott. v. Tedeschi di Trieste*).

These authors declare that the application of the galvano-cautery does not produce the slightest pain, as the diphtheritic membrane is of course void of sensibility. At the mere touch of the glowing wire the membrane rolls up and falls off. Tedeschi emphasizes the fact that the once cauterized portion never again assumes a diphtheritic nature, and the application forms at the same time a positive check to the extension of the process over the neighboring parts. After the application of the cautery the fever is found to be sinking, and frequently to wholly disappear after two to four hours. At the same time the glandular swelling on the neck and the œdema of this region are decreasing.

The scab resulting from the cauterization falls off in eight to fourteen days, and nearly always with ample suppuration. In the first couple of hours after the application ice is found to be a useful means to limit the inflammation; later, injections of aqueous vapor are indicated to favor a rapid dissolution of the scab. Irrigations with lime-water proved a useful adjuvant to this treatment.

Unfortunately, our author has not stated how many cases have been treated by this application of the cautery. But in the face of our present therapeutic impotency in diphtheria, the method deserves earnest but cautious trial. In conclusion, we recall that the galvano-cautery is not an entirely new application in the treatment of diphtheria, but has as early as in 1857 been recommended by French military surgeons in a communication to the *Union Médicale.*

THE SYPHILIS-BACILLI.

THE present status of our knowledge concerning the etiological aspects of syphilis is less satisfactory than at any time before. The consciousness that a certain scientific topic is as yet unknown to us is by no means a deplorable one, for certain things in science do not appear destined to ever become elucidated to the human mind, and, besides, what is unknown to-day may be known to-morrow. It is a far more unfortunate state of affairs if some hithertofore obscure subject is suddenly explained by an ingenious theory or a brilliant discovery, which is again soon objected to and refuted from numerous quarters. In the former instance we know at least that we don't know anything, while in the latter we are deprived even of this hold. These views apply precisely to our present state of knowledge regarding the etiological factors of numerous specific diseases, especially tuberculosis, cholera, and syphilis. The vacuum existing in our knowledge of the causative agents of these affections had scarcely been filled by the discovery and demonstration of specific microbes, when their specific nature was disclaimed, rejected, and disproven. True, these objections are again refuted by the original discoverers, but the practising physician, who cannot spare the time for complicated staining and microscopic work, is left wholly in doubt and ignorance.

Lustgarten's discovery of specific syphilis-bacilli and their demonstration at the medical congress in Wiesbaden meet the same fate as has been witnessed in the instance of Koch's tuberculosis and cholera-bacilli: its specific character is questioned by authoritative observers.

We have before us two recent papers (*Centralbl. für Med. Wiss.*, January 2, 1886) by Cornil and Dutrelepont, both noted pathologists, who discuss the subject of Lustgarten's bacilli in an able and impartial manner.

Cornil refers to the works of Alivarez and Pavel, who found in the preputial smegma, in the vulva and anal orifice, a bacillus which closely corresponds to the microbe discovered by Lustgarten. These observers failed to detect the bacillus in eight syphilitic excrescences, in spite of many sections and strict observations of Lustgarten's instructions, while out of fifty-five cases of syphilitic secretions it was found thirty-three times. Cornil advances the following theses:

(1) In several normal secretions of the body a bacillus exists which has heretofore been unknown.

(2) This bacillus is, regarding its form and functional properties, identical with the microbe described by Lustgarten.

(3) It is possible that both bacilli are actually one and the same.

(4) The bacillus occurring in the ordinary secretions resembles in form the bacillus tuberculosis, and shows a certain behavior as to coloration which is only found in the bacillus of tuberculosis and leprosy.

(5) From the bacillus tuberculosis this microbe differs, besides in its smaller size and its less granular appearance, by its lesser resistance against alcohol after the coloration with fuchsine and the treatment with nitric acid, nor can it be stained by Ehrlich's method with methylviolet.

(6) These facts deserve to be considered if we intend to establish a diagnosis on the microscopic inspection of secretions.

Cornil concludes his paper by remarking that the works of Alivarez and Pavel are still incomplete, as no cultures of their microbe have as yet been made; hence their pathogenetic nature is of course an open question. But this is equally questionable in the case of Lustgarten's bacilli, as no cultures of it have yet been made.

Dutrelepont communicates his continued investigations of the syphilis-bacilli. He found them in nine cases of sclerosis, in one of a broad condyloma of the external labiæ and anus, viz., in five papules, one gumma, and in the secretions of mucous patches and indurated ulcers of the upper lip.

All attempts of making a culture have proved futile.

These observations show that it is as yet impossible to either wholly accept or wholly reject the specific nature of the microbes detected and described by Lustgarten, and that further investigations have to be made in this direction.

LEAD-POISONING.

IN a recent editorial we called attention to the fact that the absence of a blue line upon the gums is no proof that the patient is not suffering from lead-poisoning. A case which has recently occurred in the practice of Dr. Wood, in Philadelphia, seems to us of such great interest, as showing the necessity of the practitioner always being on his guard in regard to this form of poisoning, that we notice it editorially. A gentleman in the centre of Pennsylvania was taken ill with very obscure nervous symptoms which developed after domestic and business troubles, and which appear to have been attributed by his various medical advisers to overwork and overworry.

To show the possible obscurity of lead-poisoning and the difficulty of recognizing it, it is allowable to state that this victim was first under the care of his local practitioner; afterwards for a period under that of one of the most eminent Philadelphia professors; then, under the advice of an eminent neurologist of New York, went abroad in charge of a young physician. Subsequently he came to Philadelphia, and was for some weeks under the care of a physician of world-wide renown. During all these months the nature of the case was not suspected.

The chief symptom in the man's case was, as it had been all along, a peculiar insomnia of the most aggravated type, so that the patient for many months had not consciously slept two consecutive hours except under the influence of very large doses of narcotics. So soon as he would get into bed he would be seized with a feeling of unrest associated with a peculiar irritation of the skin, with formications and itchings, which affected not only the skin, but also the mucous membranes, taking at times the form of burning pains along the urethra. There was also a feeling as though the man must walk, so that he would be forced in a few minutes out of bed, and would pass the whole night pacing up and down the floor. Night after night the patient had been driven backwards and forwards until he had fallen, on more than one occasion, upon the floor from sheer exhaustion. In several places he had been asked to leave boarding-houses and even large hotels on account of the disturbance produced by his nocturnal habits. There was no palsy, no failure of mental power, no other symptoms present than those which we have described. In examining the case Dr. Wood first came to the conclusion that the insomnia was probably secondary, and produced by the peripheral nervous disturbance. It is a fact that persistent universal peripheral irritations giving rise to pruritic sensations, when not connected with the change of life in women, are, in the great majority of cases, due to the presence of some toxic agent. Such a poison in a large proportion of the cases is gouty, but there was in the present case no gouty history, and no gouty symptoms other than the peripheral irritation. This led to the suspicion that possibly the poisoning was plumbic; but on examining the mouth no blue line was discovered upon the gums. In going over the history, however, the patient stated that at one time he suffered from horrible abdominal pains, which he affirmed usually came on shortly after eating, and were often unbearable. This condition lasted for some weeks, during which time the patient was excessively costive, the stools being scybalous and light of color. The next inquiry was as to the water-supply of the patient's home, and it was found that the gentleman occupied a country mansion supplied with, as he stated, "beautifully pure water from a mountain spring running through metal pipes."

With this positive history and the negative facts that no known nervous disease conforms in its type with the symptoms present in the case, Dr. Wood believed that the diagnosis of lead-poisoning was justified. Chemical examination of the water used in the house of the patient showed that it contained a large proportion of lead; further, although the patient had been away from home about a month, and had not been using the water containing lead, Dr. Marshall, of the University Chemical Laboratory, found lead in the urine. The process employed by Dr. Marshall was to boil three litres of urine down to about two ounces, adding nitric acid until the organic matters were thoroughly charred, then suspending in the liquid two pieces of platinum foil respectively connected with the positive and negative poles of the battery. After the current had been passed for an hour or two a distinct discoloration of the platinum connected with the negative pole of the battery was ob-

served. This platinum was then heated in diluted nitric acid, and through the solution thus obtained sulphuretted hydrogen was passed. The black precipitate which formed was collected, and when reduced by the flame of a blow-pipe on a piece of carbon, yielded metallic lead.

A NEW DISINFECTANT.

ANY novel facts in regard to disinfectants are of such importance that we give prominence by putting into our editorial columns the results of some researches made by Dr. A. C. Abbott in the Biological Laboratory of the Johns Hopkins University (*Medical News*, January 9, 1886). If, as it is claimed, the stannous chloride is free from poisonous properties, it ought to be used very largely as a disinfectant. Dr. Abbott finds that the stannous chloride comes far short in the germicide value of mercuro-chloride; but when in contact with spores in decomposing organic matter, kills them at one per cent. after an exposure of two hours, and that it failed to disinfect the mass when present in 0.8 per cent. after the same length of time. Comparing these figures with those indicating the potency of zinc chloride, copper sulphate, zinc sulphate, and ferric sulphate, which are the salts most generally used for the purpose of disinfection, we find the first of these, zinc chloride, to be active in five per cent., and inactive when present in 2.5 per cent.; while the last three—copper sulphate, zinc sulphate, and ferric sulphate—we find to be inefficient respectively in twenty per cent., forty per cent., and in saturation. These facts, taken in conjunction with the moderate cost of stannous chloride, and its entire inactivity on lead pipes, are sufficient to indicate a large field of utility for this compound.

IN our last issue, the author's name of "Notes on Brucine" should have been Dr. Ralph W. Seiss, instead of Ralph W. Zeiss.

Reports on Therapeutic Progress.

ON PNEUMO-BULBARY ASTHMA.

The affection known under the name of asthma has seen many a strange change before it could maintain a firm position in the therapeutic science. In the early days of medical knowledge "asthma" meant all forms of dyspnœa. Galen and Celsus, for example, regarded asthma, dyspnœa, and orthopnœa all as one single pathological group.

Sydenham recognized three various forms, Willis and Cullen added each three new categories, and Sauvages finally described eighteen. This modification of different varieties of asthma would have been infinitely continued unless the light of pathological anatomy had demonstrated their true character as mere phenomena dependent upon various morbid alterations of the heart, the aorta, and the lungs.

Later a serious and remarkable reaction took place, which reached its culmination by Rostan's proscription of this affection in 1821, who simply eradicated its name from the clinical nomenclature in favor of affections of the aorta.

Laennec, again, created a third and new phase for this affection. Noticing that some of his patients were seized with nocturnal paroxysms of dyspnœa, he constructed for these cases the term of "essential asthma." This is the "petit asthme du soir," which has still a singular hold upon the professional mind. If found to deviate, however, from the ordinary type, it is no longer recognized, and its doom is complete if it is found to be associated—as is, in fact, always the case—with emphysematous and catarrhal conditions. Hence in our hospital-lists we read only of emphysema and catarrh. Louis established the autonomy of the emphysematous process, while Bean in his remarkable paper on asthma referred all pertinent symptoms to the bronchial catarrh. For a large number of cases this view was correct, especially in opposition to the so-called "nervists," who regarded the whistling respiration solely as the characteristic, and the bronchial cramp as the cause, of asthma.

PROF. G. SÉE, in the third volume of his still unpublished *Médecine Clinique*, proposes to establish the affection upon its true clinical basis, and to present the clinical proofs that no asthma exists without dilatation of the air-vesicles and a fibrinous exudation, that frequently a genuine catarrh coexists, and that the "petit asthme essentiel nocturne" in the course of time appears also during the day. In this connection he endeavors to show how the lungs are invariably expanded to the utmost, until they form an inelastic sac, which is designated as emphysematous, and that finally the asthmatic catarrh becomes unimpeachable.

Dr. Sée believes that asthma forms a triology, having a nervous, a mechanical (alveolar), and secretory (bronchial) basis.

Definition—Nervous Origin.—Every dyspnœa dependent upon an alteration of any organ is not a true asthma ; no matter whether this dyspnœa is accompanied by emphysema or not, it is nothing more than a symptom, a pseudo-asthma. The cardiac asthma is the type for this category.

Asthma can only be regarded as genuine and as an independent affection when its nervous origin is established. Asthma, then, is a neurosis of extreme importance, chronic, and invariably marked by paroxysms presenting a definite mechanism, a precise character, and a fixed localization. The actual seat of this neurosis is the medulla oblongata and the respiratory centre in it ; its cause, an inherited or acquired or heightened reflex irritability of this organ. As exciting causes of the paroxysms we must assume irritations radiating from the pneumogastric or the peripheral nerves, such as the trifacial, while as effect we have the activity in the motor nerves of the inspiratory muscles, chiefly the diaphragm. We therefore have to deal in asthma with a permanent neurosis of the medullary bulb, proceeding from an irritation chiefly in the vagus, and resulting in a tetanoid contraction of the diaphragm.

Experimental Argument.—In its character of neurosis asthma is a domain of experimental medicine ; the experiment, however, can only be viewed as conclusive if all phenomena, and all functional interference observed in patients, are reproduced by it. If physiology shows us an artificial dyspnœa with expanded pulmonary alveoli and a bronchial catarrh, we have the true experimental asthma ; if, however, one of these sequelæ be wanting, we would have only a fragment of human pathology and an imperfect asthma. This has been done recently ; first the convulsive dyspnœa has been produced, then a dyspnœa with pulmonary ectasy (ectasis pulmonum), but the artificial production of the catarrh has not yet been accomplished.

I. *Artificial Broncho-Spasmodic Dyspnœa.*—When Laennec first recognized that form of nervous asthma, which can be termed a limited one, as he excluded every material lesion of the lung, especially catarrh and emphysema, the convulsive contraction of the bronchial muscles (discovered by Reiseissen) was universally looked upon as the causative agency of the dyspnœa. This theory, aided by experimental physiology, held long supreme sway, and is still held by many authors.

II. *Bulbo-Phrenic Dyspnœa.* — Meanwhile, Wintrich advanced his objections against this theory, and urged especially that the bronchial spasm could not produce nor explain the enormous alveolar distention, the expansion of the lungs far beyond their normal limits,—in one word, the emphysematous dilatation which invariably attends the asthmatic paroxysm. As long as nineteen years ago Dr. Sée endeavored to show that not the bronchial muscles, but the sensory fibres of the vagus, formed the origin of the paroxysm, and that transferred to the medulla oblongata and the motor inspiratory muscles, the phrenic nerves were ultimately reached. And as the result of this reflex phenomenon we have the tetanoid contraction of the diaphragm, the prolongation of the chest, and the dilatation of the lungs.

All clinicians excepting Bamberger, in Vienna, upheld this view faithfully, though it was fiercely attacked by many. Riegel, one of its strongest supporters, has recently, in an experimental essay, declared his error and demonstrated the neurotic nature of asthma.

III. *Artificial Catarrh.*—These two main points, then, the dyspnœa and alveolar dilatation, have been furnished by the experimental science, and there only remains to show how the bronchial secretion originates.

Résumé.—The nature of asthma, then, is established on a neurotic basis, and the affection is a pneumo-bulbary, or, better, a pneumo-bulbo-phrenic one. There will be different types only remaining : if the nervous element predominates we will have the nervous asthma in the special sense ; if the emphysema is pronounced, the alveolar or emphysematous asthma ; and, lastly, if the bronchial catarrh is conspicuous, we will have the bronchial asthma.

Difference between the Neurotic and Pseudo-asthma.—A large number of morbid conditions may give rise to paroxysms which simulate the genuine asthmatic attack in all respects but differ wholly in their origin. The principal pseudoasthmatic paroxysms are cardiac, uræmic, tuberculo-pulmonary, laryngeal, and cerebro-spinal. In all these cases a thorough examination will reveal the existence of a primary organic lesion, hence a condition which can be distinctly separated from a neurosis.

Quantity and Appearance of the Expectoration.—A certain number of cases show no sputum whatever. Usually the expectoration is scanty, consists of small, hard fragments of a pale gray and semitransparent color. We find in them two main elements, viz., peculiar crystals and spiral threads.

I. *The so-called Asthma-Crystals.*—In these fragments, and in the middle of the spirals or the pus-cells, we find octahedral crystals, which have been long ago demonstrated by Charcot in the leucæmic spleen and in the medulla of bones. These crystals, apparently composed of phosphates and an organic basis, play, according to Leyden, a very important rôle: they are said to irritate the bronchial mucous membrane, and to thus produce the asthmatic paroxysm by reflex action. After the attack they disappear until their regeneration gives rise to another one. Levy* has confirmed the regular appearance of these crystals in twenty-six cases observed by him.

Objections.—The above-mentioned observer, however, found these crystals also in the sputum of patients who, at the time, were not under the influence of a paroxysm. The crystals may also appear in fibrinous bronchitis, in acute bronchitis, in pulmonary phthisis, and in bronchial catarrh, without a trace of asthma. Consequently it is not certain whether these crystals actually produce the attack of asthma, which, according to Levy, is an epithelial catarrh. According to Ungar,† these crystals are not all pathogenetic, but are generated in the sputum outside of the body.

II. *Spiral Bronchial Secretion.*—According to Unger and Curschmann,‡ the gray or yellowish spiral threads to be found in the sputum are the actual exciting causes of the paroxysm. They are usually empty, contain air, and are in their longitudinal axis traversed by a shining central thread, which consists of finer spirals and round cylindrical cells. Their origin cannot be doubtful; they are an inflammatory exudation of the ultimate bronchioles. This shows that we have to deal with an exudative bronchiolitis. According to Curschmann, bronchiolitis is a chronic affection, observable in every phase of life, frequently combined with a chronic catarrh of the large bronchi, and producing a more or less intense expiratory dyspnœa, with pneumatosis of the lungs. This is the cause of the secondary nervous asthma. The primary nervous asthma is of rare occurrence.

Objection.—Vierordt‖ found these identical crystals in the sputum of a patient on the seventh day of a fibrinous pneumonia; on the eighteenth day they had disappeared. V. Jaksch, Vincenzo, and Pel¶ found them likewise in fibrinous pneumonia, and Curschmann observed them in twenty-seven cases of pneumonia four times and twelve times simultaneously with fibrinous coagula, and not knowing what to do with these crystals, declared all those pneumonic patients as asthma-candidates!

Résumé.—These discussions and observations show that the bronchial secretion of asthma differs from the ordinary catarrh by the tenacity, scantiness, spiral fibres, and the frequent coincident appearance of the Charcot-Leyden crystals in the sputum. But these elements do not own any pathogenetic character, as they are also to be met with in other broncho-pneumonic affections without a trace of asthma. Hence the theory that any elements found in the sputum of asthmatic patients are the cause of the paroxysm is no longer tenable.

(To be concluded in the next number.)

* Centralblatt, 1885. No. 14.
† Congress f. innere Medicin, 1884.
‡ Deutsch. Archiv f. Kl. Med., 1884. Nos. 1 and 2.
‖ Berl. Kl. Woch., 1884, p. 13.
¶ Centralbl. f. Kl. Med., 1885. No. 30.

HYOSCINE HYDROBROMATE.

Dr. Henry M. Wetherill has been employing hyoscine hydrobromate as an hypnotic for the past six months in the Pennsylvania Hospital for the Insane, and he publishes the results of his experience in the *Med. Times*, December 26, 1885. He used a formula containing 1 grain of the hydrobromate of hyoscine, 9 fluidrachms of distilled water, and a drachm of alcohol, every 10 minims of this solution containing $\frac{1}{60}$ of a grain of hyoscine. As a hypnotic, the usual range of dose is from $\frac{1}{120}$ to $\frac{1}{60}$ of a grain given at bedtime, preferably by the mouth; very frequently a less dose than gr. $\frac{1}{120}$ will be sufficient; gr. $\frac{1}{200}$ has often acted better in insomnia than has a larger quantity. It is very seldom necessary to repeat the dose; and another very decided advantage possessed by hyoscine over hyoscyamine is that small doses can be continued for a long time without increase; whereas the patient soon tolerates small and then moderate quantities of hyoscyamine, and finally resists even very large doses of it. Dr. Wetherill has given hyoscine a thorough trial in the insomnia occurring in the course of acute delirious mania, and with marked success, having succeeded, when all the usual modes of treatment had proved inadequate, in securing for the patient from six to ten hours of quiet sleep nightly for the past nine weeks, with but four or five exceptions, giving but one dose in every twenty-four hours, at bedtime, the amount ranging from gr. $\frac{1}{120}$ to

$\frac{1}{10}$. The insomnia in these cases is one of their chief elements of danger. If it is possible to give such a case a fair amount of sleep and of nourishment in a concentrated form, the probability of a favorable issue might be entertained. In the insomnia of agitated melancholia, of the morphine habit, of alcoholism, of acute mania, of neurasthenia, of chronic mental disorder, with habitual wakefulness and motor activity, and in those confirmed cases of insomnia from unascertained cause which usually prove so obnoxious to treatment, hyoscine has been found to answer a very good purpose. It does not invariably succeed; but the failures have been very exceptional. In many instances the chronic insomnious habit has been broken so as to permit of the withdrawal of the hypnotic. It is a severe test of the value of any hypnotic to administer it in daytime, and the drug under consideration has been found to act very well even under this condition. It seems scarcely necessary to refer to the unsatisfactory and often disappointing action of the hypnotics which are now in general use, and it would seem as though this remedy is the one for which rational therapeutists have waited for so long a time.

Now, as to its usefulness as a general sedative, Dr. Wetherill claims that he has had results which justify the assertion that it is the very best means at present at our disposal for calming the motor excitement of acute and chronic mental disorders in their talkative, active, noisy, destructive, or violent phases. In this class of cases the range of doses may sometimes have to be greater than in the treatment of insomnia: from gr. $\frac{1}{120}$ to gr. $\frac{1}{60}$. He has seldom been obliged to give so much as gr. $\frac{1}{60}$, and has rarely had to give more than one dose in twenty-four hours. As an occasional exception, a patient has been found whose excitement has successfully resisted a full dose; but it must be remembered that some cases of chronic mental excitement have been dosed with varying success through a period of years, until a peculiar condition of resistance to and toleration of remedies of this class has become established. Where a large number of excited patients are congregated, even though they may be classified with care, there are a few who seem to be the cause of most of the general disorder and confusion: reduce these few to a condition of comparative quiet, and the larger but less aggressive element remains tranquil.

The physiological effect of a full dose of hyoscine, say gr. $\frac{1}{60}$, is manifested within twenty minutes. These are—brief, transitory bewilderment; marked interference with co-ordination; widely-dilated pupils; slow, regular, very full pulse; dryness of the throat; relaxation of the vocal cords; very slow, full respirations, sometimes becoming Cheyne-Stokes; marked suffusion of the face and of the general surface of the body; a slight rise in temperature; and free diaphoresis, which does not seem to restore normal temperature. There is general muscular relaxation and a sense of wretchedness. Sleep usually follows, which continues from one to five hours, if the dose is given in daytime and the patient is not put to bed. This amount, administered at night, would be followed by sleep lasting for eight or ten hours. The mydriatic effect is rather transient, but usually persists through an entire day. The pulse is slowed about twenty beats per minute, and this effect gradually wears away during eight or ten hours, and is often followed by a very variable period of pulse-acceleration, which seems to be simply a reactionary hastening of the pulse to restore the disturbed balance of the circulation. The normal rate of respiration is gradually restored through a period ranging from three to five hours.

The rise in temperature is not an invariable result, and is frequently small,—seldom exceeding one and a half degrees,—and the balance of temperature is usually restored within two or three hours. Dryness of the throat often persists through an entire day. Suffusion of the surface of the body is usually transitory. In moderate and in small doses the effect is, of course, proportionate to the amount employed; but the same general symptoms are present, and the patient is quieted accordingly. Interference with the appetite is sometimes observed. It does not seem to act upon the bowels nor upon the kidneys.

Hyoscine is not always well borne; occasionally the following symptoms have followed the use of a moderate dose: nausea, vomiting, anorexia, dysuria, syncope, with small, rapid, irregular pulse, and with symptoms of partial paralysis of the pneumogastrics.

Is it best to give the remedy hypodermically or by the mouth? It acts almost immediately and in rather less dose by the former method; yet Dr. Wetherill prefers usually to give it by the mouth, as it acts very promptly, when taken into the stomach, even in very small doses, and this method offers no shock to an excited or timorous patient.

ON SYMPATHETIC OPHTHALMIA.

DEUTSCHMANN instituted a series of researches with the view to determine the pathogenesis of sympathetic ophthalmia (*Gräfe's Archiv*, xxxi. p. 277), and came to the conclusion that the inflammation was transferred from the affected to the healthy eye by way of the optic nerve and its investments, and that micro-organisms are the actual carriers of the infection. He succeeded by injecting the staphylococcus pyogenes albus into one eye in producing a sympathetic inflammation in the other. In five eyes extirpated a long while ago on account of sympathetic ophthalmia he found in the vitreous body numerous cocci and bacilli, and in four other eyes removed for the same cause he detected at once the staphylococcus pyogenes aureus and albus. Deutschmann does not believe that we have to deal in these cases with specific pathogenetic microbes, but that there exist a number of various micro-organisms in this affection which, according to growth and propagation, may serve to transfer the inflammation from the affected to the healthy eye.

A NEW GALACTAGOGUE.

At a recent Medical Congress, in Naples, PROFESSOR PROTA-GIURLEO called attention to the Ditana digitifolia, a Mexican plant, as possessing remarkable galactagogue properties (*Phar. Post*, November 28, 1885). He mentioned several cases reported in Italian journals in which the administration of an infusion (of what parts of the plant is not stated, nor the strength) to nursing women had exercised a marked influence upon the milk-glands, inducing a considerable secretion of milk, even in cases where it had been nearly or entirely suppressed. Ethereal tincture of the flowers of Ditana digitifolia, made into a kind of elixir with syrup, is said to have been brought out by an Italian pharmacist under the name of "galattofore." The flowers, and especially the stamens, are in addition credited with sudorific properties.

Professor Giurleo has also directed attention to the Rhamnus alaternus and Ligustrum vulgare as plants possessing properties antagonistic to those accredited by him to Ditana digitifolia. The property of Rhamnus alaternus in diminishing the secretion of milk was reported about forty years since, though since practically overlooked, and Professor Giurleo now states that he has found the Ligustrum vulgare, though so far removed from it botanically, to possess exactly similar properties. The drug is said to be best administered as an infusion of 3 grammes (45 grs.) of leaves in 150 grammes (5 oz.) of water, twice in the course of twenty-four hours, this dose being repeated for several days.—*Pharm. Journ. and Trans.*, December 25, 1885.

ANTIPYRIN AND THALLINE.

The result of a long series of observations which were made at the clinic of Prof. Eichhorst, in Zurich, has been published in detailed form in Ziemssen's *Archiv für Klinische Medizin*, by DR. SARA WELT. In the following article will be given a short synopsis of the most important conclusions reached.

Antipyrin.—The number of cases consisted of 122 patients, of which 62 were males and 60 females. Among these were 88 cases of typhus abdominalis, 10 of pneumonia fibrinosa, 11 of phthisis pulmonum, 3 of erysipelas facie et capitis, 3 of rheumatismus articularis, 1 of rheumatismus muscularis, 2 of diphtheria faucium, 2 of endocarditis ulcerosa, 1 of variola, and 1 of metritis. The total number of single doses amounted to 1134. The largest quantity which was given any one patient in the course of the disease was 165 grammes (5½ oz.) within thirty days. During the commencement of the observations the author confined herself to the directions of Filehne, and prescribed 2 grammes (30 grs.) for each of the first two hours, and 1 gramme (15 grs.) for the third hour, provided the fever had not already abated. Vomiting was by no means rare, though this sometimes—not in the majority of cases—was prevented by adding opii 0.01 to 0.02 ($\frac{2}{10}$ to $\frac{3}{10}$ gr.) to the powder.

Soon, however, the author began to give antipyrin per rectum, and then ceased giving single doses as before mentioned, but chose a dose of such quantity as would suffice to cause complete apyrexia; that is, the object, generally speaking, was to determine during the first and second day what may be termed the individual dose of antipyrin which would bring about the above result. She began by prescribing 2 grammes of antipyrin, giving children but 1 gramme. Often a complete and prolonged effect was obtained by this. On the succeeding days the quantity was increased to 3, 4, and, if necessary, to 5 and 6 grammes. These last-named doses, however, were not frequent, but in one case a single dose of 8 and 10 grammes was given. The powder, dissolved in 50 grammes (nearly 2 oz.) of tepid water,

was injected by a small glass syringe into the rectum. No threatening symptom was ever observed from administering antipyrin in this manner. The relation of what may be termed the individual dose to this long course of observations was such that in twenty cases a complete effect was secured with 1 gramme of antipyrin. The temperature fell to and below 38° C. (100.4 F.) sixty-two times. An almost complete effect—by which is meant a fall in temperature to between 38° and 38.5° (100.4° to 101.3° F.)—was secured with 1 gramme of antipyrin nineteen times in eight cases. But it should be stated that doses of 1 gramme were almost exclusively given to children, and doubtlessly these frequent effects may be ascribed thereto, though doses of this quantity may suffice for adults.

Doses of 2 grammes secured complete effects, in seventy-two cases, four hundred and ninety times; almost complete effects, in thirty-three cases, seventy-one times. Doses of 3 grammes secured complete effects, in sixteen cases, fifty-three times; almost complete effects, in six cases, six times. Doses of 4 grammes secured complete effects, in twenty-six cases, seventy-four times; almost complete effects, in nine cases, fourteen times. Doses of 5 grammes secured complete effects, in five cases, sixteen times; almost complete effects, in two cases, three times. Doses of 6 grammes secured complete effects, in ten cases, nineteen times; almost complete effects, in one case, twice.

A dose of 8 grammes achieved an almost complete effect once in one case. A dose of 10 grammes resulted in a complete effect once during one case.

The last named two doses were prescribed for a patient in the eighth month of pregnancy, suffering from pneumonia fibrinosa, without any disagreeable consequences. The movements of the child, which were very restless at times of fever, became very quiet, and it was noticed that whenever antipyrin was prescribed for gravid women it had a quieting influence upon the child's movements.

After two doses of 2 grammes each, complete effects were secured, in thirty-three cases, fifty-eight times; almost complete effects, in twelve cases, fourteen times.

After three doses of 2 grammes each, complete effects were secured in eleven cases, fourteen times; almost complete effects, in three cases, three times.

After four doses of 2 grammes each were obtained complete effects, in three cases, four times. After two doses of 4 grammes each, complete effects, in three cases, three times; almost complete effects, in one case, once. Seventy single doses of antipyrin were without any effect.

Regarding the before-mentioned individual doses, it was noted that they may often vary for the individual. Persons whose condition responded promptly to small doses of antipyrin suddenly continued to have fever, in spite of taking the dose which had until then proven effectual. Dr. Welt particularly lays stress upon these observations in connection with patients suffering from erysipelas and pneumonia. As long as the anatomical process remained stationary the determined individual dose remained unchanged; as the disease progressed an increase in the quantity of antipyrin became necessary. Occasionally an antifebrile effect was not observed, in spite of very large doses.

Regarding the duration of the antifebrile effect of antipyrin, it was observed that this effect continued as much longer as the quantity of the individual dose required to abate the fever became larger. Dr. Welt frequently made this experiment: she gave patients whose individual dose had been determined double the quantity, and observed that in a large majority of cases the effect, especially in reference to its duration, was not only again as long, but frequently still longer.

Among one hundred and twenty-two patients for whom antipyrin was prescribed, the author noticed the exanthema following its use thirteen times, or 10.6 per cent. As to males and females, it was observed in the former six times, or 9.6 per cent., and in the latter seven times, or 11.6 per cent. With the exception of one case, it invariably followed with patients suffering from typhus abdominalis. Possibly patients suffering from gastro-duodenitis may have a tendency to exanthemata upon taking antipyrin. As a rule, a prolonged use of antipyrin was required to produce an exanthematous eruption; but in one case such an eruption broke out twelve hours after taking a dose of 6 grammes. It seems that women are more inclined to this exanthema than men.

Concerning the character of this exanthema, it was observed that in almost all cases it was a roseolous exanthematous efflorescence, very much like an urticaria. In three cases a hemorrhagic exanthema appeared, and Dr. Welt found that very small miliary, thickly-sown hemorrhages favored the inguinal region, and generally the flexor sides of the large joints of the body.

In the author's observations she found that

the eruptions of this exanthema took place without the patient suffering the least pain ; and in the further course of the disease most of her patients did not complain of the exanthema, although in one case the patient experienced itching in the affected locality. In several cases she observed desquamation of the skin. Contrary to the experience of other observers, exanthema in the face was also noted. Sometimes the entire face was bloated ; the rima palpebrarum reduced on account of œdema of the eyelids. In some cases the author noticed a heightened redness of the mucous membrane of the lips,—not so much of the mucous membrane of the cheeks,—so that it would suggest an antipyrin exanthema. Still, it seems that this occurs rarely. Likewise she found erythematous patches on the palmar surface of the hands and feet. Regarding the duration of the exanthema, it had a tendency to assume a subacute course. Only in two cases had the exanthema faded by the fourth day. Generally traces of it were found in the second week, and sometimes at the end of the second week.

In summing up the effect of antipyrin, Dr. Welt found that the temperature would begin falling immediately upon taking it, and continue to do so until normal temperature was reached. Not seldom it would fall to a subnormal degree. It was observed that the temperature would rise after taking antipyrin, and not begin to fall until after the lapse of half an hour. The pulse, however, does not keep step with the temperature. Sometimes it would remain unchanged, or become slightly less frequent. Sometimes a temporary increase in frequency would succeed the fall in temperature. It is almost a rule that even with determined individual doses of antipyrin the temperature may not only become normal, but subnormal, though no clearly-defined cases of collapse were met with. During the fall in temperature she noticed at first a slight perspiration, which becomes more profuse, sometimes so much so that change of linen becomes necessary. Simultaneously a slight cyanosis makes its appearance on the back of the forearm and hands, which may become very intense.

Often the extremities were cold. The entire appearance of the patient doubtless resembled one of collapse, but the feeling of collapse was absent, nor could any loss of strength be determined.

In the recurrence of rising temperature of patients whose fever had abated the author observed six cases of chill,—almost always chilliness, never a clearly-defined chill. Finally, there are no specific effects of antipyrin.

Briefly, then, according to her experience antipyrin is an excellent *symptomatic* remedy, but it is without influence on the disease itself.

Thalline.—Experiments with this new remedy were made on seventeen feverish patients, and Dr. Welt was soon convinced that, like Jaksch, and, later on, Alexander, she had found in thalline a powerful and generally effective febrifuge, because, among one hundred and forty-one doses, the febrile effect was wanting in but *three* patients. In the mode of administration she followed the directions of Jaksch. She usually began by giving the patient a dose of 0.25 (4 grs.) thalline, and continued giving the quantity hourly until the temperature became febrile The largest dose was 1.5 grammes (22 grs.) within six hours. The general characteristics of the fall in temperature after the use of thalline resemble closely those noticed after the use of antipyrin,—usually first a fall in temperature, then profuse perspiration takes place, but not so profuse as after taking antipyrin. Likewise after the use of thalline at first an erythematous and then cyanotic discoloration of the skin was noted in the face and on the extremities. The author noticed frequently occurrence of chills upon the rise of the abated temperature. Their intensity varied : not rarely a severe chill took place which lasted over two hours. Among one hundred and forty-one single doses the occurrence of chills was observed seventeen times, or 12 per cent.; among eleven hundred and thirty-four single doses of antipyrin, six times, or 0.5 per cent. Vomiting was observed ten times, or 7.1 per cent., in comparison with antipyrin, among eleven hundred and thirty-four doses, one hundred and fifty-three times, or 13.5 per cent., and in this respect antipyrin is inferior to thalline. In one case, after using thalline, the urine, which at a high temperature had shown no traces of albumen, was not only more highly colored, but contained albumen, which did not disappear until thalline was stopped. This was not experienced in the use of antipyrin. Diarrhœa was frequently observed after the use of thalline. Shortly after the first doses the stools were of a striking watery character. This was not observed in connection with antipyrin ; in fact, it was found that antipyrin had a kind of astringent effect. In reference to the frequency of the pulse, the author found not rarely that, as with antipyrin, the pulse became more frequent as the temper-

ature fell, soon, however, to conform more or less with the fall in temperature in the decrease of beats. In the occurrence of chills at the rise of the abated temperature thalline reminds one of kairine; but unlike kairine, inasmuch as the patients did not become uneasy; in fact, in spite of the chill, they were, without exception, not uncomfortable.

Therapeutically speaking, the author would place thalline between kairine and antipyrin, with more of the good qualities of antipyrin. Still, we cannot pronounce them equally good, because, though thalline may be a more effective remedy to reduce high temperature to the normal, its effect is not so lasting. Thalline can likewise only be regarded as a symptomatic remedy.

EXTERNAL USE OF LOBELIA INFLATA.

Dr. V. N. Reichard highly recommends the use of lobelia inflata (*Med. Times*, December 12, 1885) as a local application for indolent sores, chronic erysipelas, and especially in incised wounds, in which latter class of cases it acts as a hæmostatic and astringent. The mode of employment of lobelia for this purpose in cases of incised wounds, no matter how great the hemorrhage, provided, however, it does not require a ligature, is to bring the edges of the wound together, and to hold them for a few moments, while a pledget of cotton, wet with tincture of lobelia, is applied. Dr. Reichard says that the hemorrhage will then cease and the parts adhere, and, although lobelia may not be a germicide, it will so entirely close up a wound as to render it perfectly aseptic.

NUX VOMICA IN THE TREATMENT OF PROLAPSUS OF THE ANUS.

M. Schwartz (*Les Nouveaux Remèdes*, December 1, 1885) has employed the extract of nux vomica with success for the last ten years in the treatment of prolapsus of the rectum, not only in children, but even in adults in whom this condition had been neglected and had passed to the chronic stage. He administers it in a dose of ¾ to 1 grain dissolved in an ordinary tumblerful of water, of which 7, 8, or 10 drops are taken every four hours. He claims that in twenty-four hours the prolapsus will have disappeared. For children the dose is 5 drops, and for infants, up to two years of age, 2 to 3 drops. In order to prevent recurrence he advises the continuance of this medicine, in two doses daily, for a week after the cure. If the prolapsus is of long standing, and does not yield to this treatment, he adds to the above 60 grains of the extract of rhatany.

DISINFECTION BY HEAT.

Among the various means of destroying the infectious material by which certain forms of contagious disease are capable of being communicated, the application of heat has long been regarded as one of the most efficient. Modern research having shown that some communicable diseases are connected with the presence of microbes, or living organisms in the blood and tissues, a scientific significance has been thus given to the belief in the efficacy of heat as a means of destroying contagion. From this point of view it has become desirable to investigate the conditions under which micro-organisms are destroyed by heat; for if the probable inference, that all diseases of the contagious class are similarly referable to such organisms, be well founded, valuable means of counteracting their influence may be ascertained. An elaborate investigation of this subject has lately been carried out by Dr. Parsons, in conjunction with Dr. Klein, at the instance of the Local Government Board; and in the supplementary report of the medical officer of that department there is a long report upon the experiments made and the results arrived at. Going back to the earliest recorded experiments on disinfection by heat, those made by Dr. Henry, of Manchester, in the early part of the present century, it appears to have been shown by them, so far as they went, that the contagia of the ordinary infectious diseases are destroyed by dry heat at temperatures below the boiling-point of water. It was found that the activity of vaccine lymph was destroyed by exposure to temperatures ranging from 140° to 192° F. for periods of from two to four hours. Subsequent experiments of the same kind by Dr. Baxter gave a somewhat different result, which was attributed to the shorter periods of exposure to heat in the latter case. The experiments of Drs. Carsten and Coert also showed that calf lymph was invariably sterilized when heated to the boiling-point of water; but the experiments of Dr. Henry upon the precise degree of heat necessary to destroy the contagia of human communicable diseases other than vaccinia do not appear to have been repeated by subsequent investigators, owing doubtless to the ethical objections to the performance of such experiments on the human subject. Observa-

tions have, however, been recorded from time to time, tending to show that the contagia of the commoner infectious disorders, and those of yellow fever and puerperal fever, do not survive exposure to a temperature of 212° F. Davaine ascertained that the blood of an animal suffering from anthrax was disinfected by an exposure for fifteen minutes to a temperature of 123°, but that the virus of septicæmia was not destroyed by prolonged ebullition, while in Dreyer's experiments rabbits inoculated with septicæmic blood, previously mixed with water and boiled, were not infected. Later experiments by Koch and his coadjutors have been directed to ascertaining the destroying effect of chemical agents and of heat upon organisms devoid of spores, such as the micrococcus prodigiosus and the bacterium of blue pus and of septicæmia, while, as specimens of spore-bearing kinds, the bacilli of anthrax and those found in hay and in garden earth were chosen.

The general result of the experiments with chemical agents was to show the comparative or entire inefficacy as germicides of most of the substances commonly regarded as disinfectants, such as carbolic acid, sulphurous acid, chloride of zinc, etc. But the spores of bacillus anthracis were destroyed by exposure for one day to the action of aqueous solutions of chlorine, iodine, bromine, corrosive sublimate, permanganates, and osmic acid. They were also destroyed by exposure for longer periods to arsenious acid, chloride of iron, and some other substances. The destructive power of substances in the form of vapor was found in some cases to be increased by elevation of temperature. In the experiments with hot air it was found that bacteria free from spores cannot withstand exposure for one hour and a half to a temperature little over 212° F.

Spores of mildew require for destruction a temperature from 230° to 239° F., maintained for an hour and a half. Spores of bacilli were destroyed only by exposure for three hours in air heated to 284° F. The results obtained with steam were strikingly superior to those with dry heat, exposure for five minutes being sufficient to kill the spores of the anthrax bacillus; moreover, the penetration of heat into articles exposed to steam took place far more quickly than when the same articles were exposed to dry heat.

In the experiments conducted by Dr. Parsons and Dr. Klein, hot air, boiling water, and steam at atmospheric pressure were employed as the means of applying heat. The results obtained with dry hot air were more favorable to its efficacy as a disinfecting agent than those obtained by Koch; and since none of the infectious diseases for the extirpation of which measures of disinfection are commonly required in practice are known to depend upon the presence of bacilli in a spore-bearing condition, it was inferred that their contagia would not be likely to retain activity after exposure of an hour to 220° F., and that provided an article, such as a pillow, were heated throughout to that degree, it would not be likely to retain infection. In the experiments with boiling water the anthrax bacillus containing spores was destroyed by exposure for five minutes or less; and it was not thought necessary, therefore, to extend these experiments with the less resisting forms of contagia. The results of the experiments with steam at 212° F. were conclusive as to its destructive power upon all the contagia submitted to its action; and only in one instance was there room for suspicion that the disinfection was not complete when the highly resistant anthrax spores were exposed to steam for five minutes only. The concurrence of these results with those obtained by Koch, Gaffky, and Söffler is considered to justify the conclusion that the complete penetration of an object by steam-heat for more than five minutes is sufficient for its thorough disinfection. The efficacy of ordinary steam having been established so satisfactorily, it was not considered necessary to make any experiments with steam at higher temperatures, or under pressure.

As regards the practical application of this method of disinfection, it was necessary to ascertain how the required degree of heat may best be made to penetrate through bulky and badly-conducting articles, such as bedding, clothes, etc., for the disinfection of which heat is especially employed. It was further necessary to learn whether such articles could be submitted to the required degree of heat without injury; for if that is not the case the method of disinfection by heat would not present much advantage over that of total destruction by burning. Although the outer casings of such articles as pillows and mattresses coming into contact with the body of a patient are more liable to become soiled with infectious material than the inner parts, and are for that reason more likely to convey infection to other persons, it would not be safe to assume that the power of infection was confined to these external coverings, and for that reason it is necessary that the

heating should be made to permeate every part of the articles to be disinfected for a sufficient time to destroy all infectious material with which they may be impregnated. Bedding, blankets, etc., are of all things the most difficult to deal with, and even thin layers of badly-conducting materials offer considerable resistance to the penetration of heat. This is a reason why the application of heat through the medium of dry air to such articles is less readily efficacious than the use of steam; and in the experiments made in this way it was found that a satisfactory result could be secured only when the application of heat was continued for many hours. When steam is employed as the heating medium a better result is obtained, mainly in consequence of the large amount of latent heat contained in steam; partly, also, because its presence prevents the cooling effect of the evaporation of any moisture in the articles operated upon, and partly because the moistening of the dry porous substances by condensed steam is attended with disengagement of heat. The use of steam under high pressure is considered by Dr. Parsons to be an additional advantage in promoting the penetration of heat, though the opinion is not in accordance with the views of Koch. Another very difficult point to be considered in connection with this method of disinfection is the liability of articles to injury by exposure to heat. Even partial deterioration, by no means amounting to actual spoiling, of articles disinfected by heat might become a source of serious embarrassment to sanitary authorities by rendering the owners of such articles unwilling to submit them to disinfection. On this important point the report does not profess to offer a precise decision, but merely to set forth some of the general principles to be kept in view for guidance, according to the materials operated upon and the particular kind of apparatus employed. The chief modes in which injury may be caused are scorching or partial decomposition of organic textures, indicated in its incipient stages by changes of color and texture, as well as by brittleness; weakening of strength; fixing of stains so that they will not wash out; melting of readily fusible substances, such as wax, varnish, etc.; alteration of the color, gloss, etc., of dyed goods; shrinkage and felting of woollen materials, and wetting. These effects differ somewhat, according as steam or dry heat is employed. The general conclusions as to the practical utility of disinfection by heat are summed up in the report as follows: For washable articles which will stand boiling in water no other procedure is necessary, due care being taken that infection is not communicated in the removal of the articles. The articles for which a more technical "disinfection" by heat is required are such as will not bear washing in boiling water, such as blankets, rugs, carpets, cloth clothes, pillows, beds, mattresses, furs, and dresses. Articles of furniture with stuffed seats may also require disinfection, as well as rags coming from places where epidemic disease prevails. In such cases the application of steam is the most effectual. Letters may be treated in the same way, provided they are not fastened with sealing-wax. In all cases where steam is used precautions must be taken against undue wetting of the articles to be disinfected by condensation of the steam. Leather articles are at once destroyed by the application of steam, and consequently their disinfection must be effected by careful exposure to dry heat. This very interesting and important report concludes with an extended description of all the different forms of apparatus that have been introduced for the purpose of disinfection by heat, each of them illustrated by drawings to show the mode of construction, and an account of the practical experiments carried out with the assistance of various local sanitary authorities, public institutions, etc.—*Pharm. Journ. and Trans.*, December 26, 1885.

ON ADONIDINE.

HUCHARD presented in the Société de Thérapeutique, at a meeting held on December 23, 1885, a series of cardiographic and sphygmographic tracings taken from patients under treatment with adonidine (vide *Gaz. Hebd.*, January 1, 1886). Our readers will recall that adonidine is the glucoside of adonis vernalis, and was first extracted by Cervello as an amorphous yellowish extract of a bitter taste. The first experiments with the drug were made by Lesage and Montague. The cardiac frequency was found under its influence to be decreased, and at the same time a peculiar state of ventricular rigidity is induced, the ventricle itself becoming pale and anæmic.

Huchard injected 1 to 2 cg. ($\frac{1.5}{100}$ to $\frac{3}{100}$ gr.) hypodermically into rabbits, and found respiration reduced, the cardiac forces raised, disappearances of paralytic symptoms, fall of temperature, and death ensuing after fifteen to twenty hours. In man the infusion of adonis

vernalis may be given in 4 to 8 grammes (1 to 2 dr.) for a dose, four times daily, or, still better, in pill form, 4 to 5 daily, $\frac{1}{10}$ of a grain each. Huchard reported several cases in which adonidine had been successful. In one case of interstitial nephritis with galloping heart-sounds, anasarca, and beginning asystole, in which sparteine had been given in vain, adonidine induced a profuse diuresis and an unquestionable improvement in the patient's condition. For some time, however, the drug had to be discontinued, on account of diarrhœa and vomiting which it produced. When the quantity of urine fell off again, the remedy was again exhibited, and again relieved the most urgent symptoms; the diuresis rose two to four quarts daily. At the same time the arterial pressure grew stronger, the pulse more regular and full; the œdema and cardiac frequency receded. In a woman having a mitral affection, but no heart-murmur, the drug produced a very audible systolic murmur. In typhoid fever, where great reduction of the arterial pressure exists, Huchard thinks the drug might be used advantageously to raise the pressure.

THE EFFECTS OF COCAINE ON THE CENTRAL NERVOUS SYSTEM.

Dr. D. R. Brower draws the following conclusions from a paper with the above title, published in the *Journal of the American Medical Association*, January 16, 1886:

1. Cocaine in small or moderate doses is a cerebral stimulant, but produces derangement of the digestive and assimilative functions, and diminishes the elimination of waste.

2. The use of cocaine in the alcoholic and opium inebriates is not satisfactory; while it is a more or less perfect substitute, yet its use is attended with greater danger than alcohol or opium.

3. The use of cocaine in mental depression, if we carefully guard against the depressing effects of the drug upon digestion and assimilation, will often give better results than any drug hitherto used.

4. The use of cocaine in neurasthenia is a valuable addition to the treatment.

5. The drug, if administered in large doses persistently, causes a very marked deterioration of the central nervous system, producing a profound cerebral neurasthenia, and may produce such a malnutrition of the cerebrum as to develop insanity.

6. Cocaine occasionally, in doses heretofore regarded as small, produces alarming depression of the central nervous system.

ON HYPNONE.

Laborde addressed the Société de Biologie on the 12th of December, 1885, on the new hypnotic, hypnone (*Gaz. Hebd.*, January 1, 1886), and considered especially its physiological action as far as known up to the time. Injected hypodermically into a guinea-pig in doses of ½ to 1 c.c. (8 to 16 gtt.), hypnone causes a profound torpor which terminates in death. Respiration is at first quickened, but soon grows slow, labored, and asphyctic; the heart's action considerably increased in frequency, registers a progressive diminution of its force. The temperature sinks rapidly several degrees (C.). In this animal the somniferous dose is at the same time a fatal one. In a dog hypodermic injections of even 3 c.c. (48 gtt.) produce no sleep; brought into the stomach the drug causes vomiting, but likewise no somnolence. Intravenous injections, however, cause complete and instantaneous anæsthesia and a profound sleep; the pupils dilate, the reflex irritation is lowered, arterial pressure falls, probably on account of the decreased activity of the cardiac muscle, the heart-sounds grow more and more faint and inaudible, and respiration grows asphyctic.

In the meeting held on the 19th of December, Laborde delivered another essay on hypnone, and discussed especially the mechanical and physiological mechanism of the circulatory and nervous phenomena produced by the drug. He regarded a diminished excitability of the pneumogastric and a depression of motor centres in the brain as the chief factors of the physiological influences of the drug. Therapeutically, the drug appeared in his view as actually too dangerous to receive an unqualified commendation.

Grasset, of Montpellier, remarked that the drug is best exhibited as an inhalation.

CHRONIC POISONING BY BISULPHIDE OF CARBON.

At a recent meeting of the Medical Society of London, Dr. W. B. Hadden read a paper on a case of chronic poisoning by bisulphide of carbon (*The Lancet*, January 2, 1886). The patient was a man aged 45, who was employed at an india-rubber factory, where he had to inhale the vapor of bisulphide of carbon and chloride of sulphur. The main

symptoms were loss of power over the extremities, with a tendency to stagger and inco-ordination generally. He had no defect of vision. His fellow-workman had also been under treatment at St. Thomas's Hospital with general muscular weakness and visual defect with color-blindness. The case was reported in the "Ophthalmological Transactions," vol. v., in which the report of the special committee would also be found.

DR. RICHARDSON said that pure bisulphide of carbon was a powerful anæsthetic, and caused painless death. He had frequently used it to destroy dogs. Delpech, in 1866, was the first to describe the effects of chronic poisoning by this agent. This form of poisoning was more common in France, but even there it had diminished with improved hygiene of the workshops.

SCHULTZE'S SWINGING MOTIONS TO REVIVE ASPHYCTIC NEW-BORN CHILDREN.

PROF. SCHULTZE, of Jena, attracted the attention of the entire medical world when, a good many years ago, he first published his now famous mechanical method to revive new-born children laboring under asphyxia. The question whether a new-born child be actually still-born, and no vital energy be present at all, or whether the spark of life be really latent, ready to set agoing the functional mechanisms under appropriate stimulation, belongs to the most important problems that present themselves to the practitioner.

From a description of Schultze's swinging motions appearing in the December issue of *Schmidt's Jahrbücher* we make the following translation:

The child is caught by its shoulders, so as to place the thumb on the anterior surface of the thorax, the index finger in the axilla from behind, and the other three fingers of each hand transversely across the back, thus supporting the drooping head on the ulnar edges of the palmar aspects of the hands. Then spreading asunder one's feet and inclining the head somewhat forward, the child is swung with outstretched arms upward to an angle of 45°; then the swinging is stopped. The entire weight of the child rests at this moment on the thumb of the physician, which is pressed against the thorax of the child. This position occasions a considerable compression of the thoracic viscera not only from the diaphragm, but also from the chest-walls. This passive expiration occasions often a discharge of the aspirated fluids through the respiratory channels. Then the physician moves his arms downward, and swings rapidly the child toward his feet, whereby the thorax of the child is widened. As the child hangs by its upper extremities, and the sternal ends of the ribs are fixed, its own weight goes to elevate the ribs, while the diaphragm recedes on account of the shock imparted to the abdominal cavity. This equals a mechanical inspiration of a considerable importance. After a few seconds the child is again swung upward, and the aspirated fluid is then usually discharged.

THE INDICATIONS FOR LAPAROTOMY IN PENETRATING STAB AND SHOT WOUNDS OF THE ABDOMEN.

At a stated meeting of the New York Academy of Medicine, Section on Surgery, held December 14, 1885, after a brief introduction by the chairman, Dr. Stephen Smith, the discussion was opened by DR. JOSEPH D. BRYANT (*Boston Med. and Surg. Journ.*), who said that he who unconditionally asserted that any operation or method of procedure should be resorted to in all cases, even though it were a measure accepted by the profession generally, took a position that required. in justice to the profession and the patient, that all operators should be competent and well equipped for its performance. Especially was conservatism necessary in the advocacy of an operation, the propriety of which, as yet, was spoken of by many with doubt commingled with dread. But a short time had elapsed since the late Prof. James R. Wood had in this hall opposed laparotomy in the cases under consideration in what were generally recognized at that time as sound practical principles; and though marked advancement in all surgical procedures had taken place since then, a sufficient period had not yet elapsed, nor were the members of the profession well enough informed on the details of the entire operation for any one to proclaim boldly that laparotomy should be performed in all cases. Few indeed were the hospitals in the city of New York which could immediately after the accident offer the recognized theoretical, and many of the practical facilities necessary to despatch and cleanliness in operating; not to mention other circumstances bearing on the success of the operation. How much less properly prepared for the performance of laparotomy would the unfortunate patient find the members composing the great mass of the profession!

There were three questions which he thought it well to consider, namely: 1. Should laparotomy be performed in any case? 2. Should it be performed in all cases? 3. When contemplated, should it be done immediately after the accident? In regard to the first, he went on to say that it could not be denied that laparotomy in connection with various abdominal growths was a fully established operation, and the results attending the invasion of the abdominal cavity by numerous operators both at home and abroad plainly attested the expediency of the measure in connection with such growths. There was no proof, so far as he knew, that the peritoneum of the male was not as tolerant of manipulations as that of the female. The excellent success of Billroth and many others, so far as immediate results were concerned, from operations on the stomach, pylorus, gall-bladder, spleen, kidneys, etc., of both sexes, fully showed that intolerance of the peritoneum to manipulations could not be considered a rational objection to the operation of laparotomy for penetrating abdominal wounds. These operations showed also that neither could the length of time required nor the extent of raw surfaces resulting in this variety of laparotomy be urged as objections to the procedure.

Among the practical elements which at the present time entered into a case of laparotomy for penetrating wounds, but which did not exist, or, at all events, exert an equal force, in laparotomy for other common causes might be mentioned the following:

1. A doubt whether the abdominal viscera were injured. This doubt could exert but little influence, since the signs and symptoms of visceral penetration were as pronounced as those relating to other conditions in which laparotomy was deemed advisable. Moreover, an exploratory laparotomy would enable the operator to settle the question of penetration.

2. Existing shock. This element was almost unlimited to those cases of laparotomy which were to be done for penetrating wounds. The shock was due either to loss of blood, to injury done the parts, or to both combined. He believed it to be an established fact that when severe shock followed immediately after the injury, it was due in the great majority of cases to loss of blood; and if this were the case, the indication was to check the hemorrhage at once. An exploratory laparotomy would decide this question.

3. Unfavorable surroundings of the patient. This element, like the second, was limited to laparotomies for penetrating wounds. It included the surroundings of the patient at the time of the injury, the removal to his home or to a hospital, and the absence of proper preparations for operating in accordance with the best recognized methods of procedure in such cases. It would be impossible to entirely avoid these contingencies; but their dangers could be greatly lessened by caution in moving the patient, by taking him to a suitable hospital instead of to his own home, and by increased familiarity on the part of the profession with all the details pertaining to the operation of laparotomy under the circumstances.

4. Unskilled operators. By this he said he meant that the surgeon in charge of the case might not have had his attention forcibly drawn to the details of the operation, which was recognized as having an important bearing on the prognosis of such cases. More particularly would he find himself in this position if he had previously looked on the operation with a disfavor bred of prejudice, instead of the result of patient toil and observation. This element could be entirely overcome if the members of the profession would but devote an ordinary amount of attention to the matter.

5. Greater exposure of the abdominal cavity and its contents. The great care necessary in order to find out and to remove from the abdominal cavity all the blood and extravasated intestinal contents, to check hemorrhage, and also to detect all the points of injury, required that the intestines and the omentum should be thoroughly examined by a preconceived method, rather than by the rough handling associated with illogical haste.

6. Existence of hemorrhage. In visceral perforation, intra-abdominal hemorrhage was necessarily a constant feature. The vessels of the omentum and of the intestines, especially the former, bled with a pertinacity which was unusual in those of other portions of the body, owing, it was thought, to the walls of the vessels being loosely supported by the surrounding tissues, also to the fact that they seemed to possess in a much less degree the inherent attributes which ordinarily enabled the natural forces of a vessel to check hemorrhage, namely, contraction and retraction. The suspicion of the existence of much intra-abdominal hemorrhage was enough to indicate the making, at least, of an exploratory incision, by which means its existence could be positively diagnosticated; when, if neces-

sary, the incision could be extended, bleeding points checked, and blood-clots removed.

7. Extravasation of intestinal contents. This was a part of the history of penetrating abdominal wounds, and constituted an occurrence which was most to be dreaded by the surgeon.

Dr. Gross asserted that no case had ever been known to recover in which fæcal matter existed in the abdominal cavity; therefore fæcal extravasation was the strongest of the indications of laparotomy,—offering, as it did, the only means of recovery.

8. The greater difficulty of cleansing the abdominal cavity. If blood and intestinal contents had been generally diffused, the cleansing of the abdominal cavity was more tedious and difficult, and also of more importance than in laparotomy for other causes; but the thorough performance of this duty, at least so far as the intestinal contents were concerned, appeared to be the only means of saving the patient's life. As to blood, no one could tell the amount that might remain, and yet recovery occur.

In Dr. Bryant's opinion, laparotomy was a justifiable operation, but it was not to be attempted, even in so-called favorable cases, unless the operator could avail himself of many of the recognized means of procedure necessary to control the shock of the operation, and was sufficiently familiar with its steps to accomplish the work with accuracy and despatch.

Leaving the second interrogatory, should laparotomy be performed in all cases, to be discussed by others, he passed on to the third. When contemplated, should laparotomy be done immediately after the accident? Assuming all things to be equal, he thought that it should be done at once, or, at least, as soon as the necessary preparations required to insure a fair prospect of success could be made. There should first be an exploratory incision, followed, if the condition of affairs warranted it, by the actual laparotomy. In the former, the incision was made in the median line, so situated and of sufficient length to expose to view the probable seat of the internal injury. The surgeon could then, in the great majority of instances, determine if penetration of a viscus had taken place, and if hemorrhage or intestinal extravasation existed. If the patient was in danger from immediate hemorrhage, the blood in the abdominal cavity could be seen through the incision.

Does the exploratory incision expose the patient to unusual danger? The large number of successful laparotomies, both in this country and abroad, seemed to him to argue this question in the negative; and if this was true, he said, all that was possible was gained, while but little could be lost from the exploratory incision.

Dr. J. W. Wright said that he was not prepared to take the ground that all cases of penetrating wounds of the abdomen were to be treated by laparotomy. As regards gunshot wounds, it would be found that the large or small size of the missile, as well as the velocity of the latter, made a great difference in the severity of the injury. For example, he did not believe that the twenty-two calibre bullet, or the ordinary bullet of about twenty grains' weight, behind which there was but about five grains of powder, was calculated to do much mischief. As a rule, such a bullet lodged in the abdominal walls, but even if it did penetrate the cavity, and pass through a knuckle of intestine, the opening made by it was so small that an erosion of the mucous membrane was caused, which would be sufficient to prevent the extravasation of fæcal matter, while the hemorrhage would be but trifling. If, then, he were called to such a case, and there were no symptoms specially calling for laparotomy, he certainly would not perform the operation. But if, on the other hand, he was called to a case in which the injury had been inflicted by what is known as an "express charge,"—a forty calibre bullet, weighing two hundred and seventy grains, with one hundred and ten grains of powder behind it,—he would expect to find abundant indications for its performance. Even in the absence of symptoms, he would consider the case one for immediate laparotomy, for he would feel very sure that if such a missile got into the abdominal cavity at all, it would cut and tear everything that came in its way.

In stab wounds, he said he would not perform laparotomy in many cases, even if he knew that the wound was a penetrating one, or even if the omentum was protruding. In this connection he mentioned the case of a drunken sailor, who stabbed himself in the abdomen, and when a portion of the omentum protruded through the wound, caught hold of it, and dragged it still farther out. Yet the man recovered perfectly, and that without being laid up for an hour. On the very day that he received the injury he went to sea, and in the course of a week the protruding omentum sloughed off, after which he had no further trouble. He also mentioned another somewhat similar case at Bellevue Hospital.

As to the matter of diagnosis, it was difficult to say in every case whether the peritoneum was wounded or not. In many instances there was well-marked shock, simply from the force of the blow, particularly if this was in the neighborhood of the epigastrium. If the shock was extreme and protracted, however, it was probable that the abdominal cavity had been penetrated. In the second place, the occurrence of meteorism indicated damage to the viscera. Thirdly, the protrusion of the gut through the wound proved nothing as to whether the gut itself had been injured or not. This was shown, however, by the escape of the intestinal contents. He thought, therefore, that we should be careful how we state that laparotomy is called for in every case.

Dr. R. F. Weir said that he did not feel in a position to say that penetrating stab wounds of the abdomen were necessarily accompanied with injury of the intestines or abdominal viscera. Unless, in any case, there were symptoms indicating the presence of such complications, the surgeon had only to watch the patient carefully. In regard to gunshot wounds, there was a different state of affairs, and for his own part he had a somewhat greater respect for the capacity for injury of the small pistol balls than Dr. Wright felt, since he had known them to penetrate the abdominal cavity and do a considerable amount of mischief. As a rule, one of the indications was to explore the wound under any circumstances, and he thought that statistics clearly proved that every gunshot wound of the abdomen, at short range, should be carefully examined, in order to see whether or not it penetrated the cavity.

The question of hemorrhage always came up in connection with the existence of shock, and it was often impossible to determine offhand in any instance whether the patient was suffering from the shock of the injury or of extravasation, or from the shock of hemorrhage. He had learned from the experience of two sad cases that delay might prove fatal (although if the shock was not due to hemorrhage, the chances of success with laparotomy would be greater after it had passed off), and, therefore, he agreed with Dr. Bryant that it was best to make a small exploratory incision in every case where it was impossible to decide whether the shock was due to hemorrhage or not. He did not agree with Dr. Bryant, however, that the small opening would show whether there was much bleeding or not. The blood naturally gravitated toward the lower part of the abdominal cavity, and, therefore, it was often necessary to pass in a sponge on a stick in order to find out the existence of hemorrhage. Dr. Wright had stated that a small bullet might pass through the intestine without causing extravasation of fæces, or otherwise doing harm, but the very reasons which would make such a wound of less severity, would also be the ones why a laparotomy would be of less severity under the circumstances. For himself, he would proceed to perform laparotomy if the exploratory incision showed that the intestines were wounded, for even if there was no extravasation of fæces, there would almost certainly be an escape of gas into the peritoneal cavity.

Dr. A. C. Post thought that in regard to incised wounds, it made a great difference in what part of the abdomen the stab was inflicted. If in the region of the stomach and liver, there was less danger of hemorrhage than if the wound was situated in the region of the intestines. Again, if it was still lower down, it might be below the peritoneum altogether, especially if the bladder was distended at the time. In this connection, he related a case in which a stab wound of the lower part of the abdomen penetrated the bladder, and was followed by a gush of urine, and said that in a case of this kind the safety of the patient, no doubt, was due to the large size of the wound, which gave free drainage, and prevented the retention of the urine in the tissues. A large and direct opening would also have much the same effect as regards extravasated fæces. When there was fæcal extravasation, however, he thought that laparotomy should always be performed and the abdominal cavity thoroughly cleansed.

Dr. W. M. Polk said that he had had no experience with laparotomy for penetrating wounds, but so far as danger was concerned, the results obtained, both at home and abroad, showed that the exploratory incision was quite a simple affair, comparatively free from danger. It seemed to him, however, that a simple incision, such as those who confined their attention to pelvic surgery frequently had to make, would scarcely be sufficient in the class of cases now under discussion. The gynæcologist generally knows about what condition of things he might expect to find, and if a large tumor was present he swept his hand around it, but did not mix his hands much with the intestines. Even in the case of the most extensive growths, the intestines were very little disturbed. This, then, was the point: If a limited exploration were made, there was comparatively little risk, but if it

was necessary to introduce the hand and feel around among the intestines, a great deal was added to the risk. Within the last two or three years he has seen this strikingly illustrated in New York, in Tait's and other similar operations. Formerly, when there were marked adhesions, the intestines were freely handled, and sometimes laid upon the abdomen, and the result was that a fatal result frequently followed. Within the last eighteen months, however, in this same class of cases, the results had been very much more favorable, and this was owing to a different method of procedure. A much smaller incision was now used, and the adhesions were quickly torn away by the hands, without regard to hemorrhage, because the latter soon ceased, and a drainage tube was introduced to remove the blood. Instead of the operation covering an hour or an hour and a half, as before, it now took only twenty or twenty-five minutes. The whole question of danger, therefore, as it seemed to him, would depend on the amount of handling of the viscera required in any given case. So far as the simple opening of the peritoneum was concerned, he thought it was as safe as sewing up the cervix uteri, and attended with really less danger than the opening of the pleural cavity.

Dr. W. G. Wylie thought that the principal cause of shock in the cases under consideration was hemorrhage. The dangers in Tait's and other similar operations, to which Dr. Polk had referred, he believed to have been due not so much to handling of the intestines as to exposure to septic influences from the atmosphere, sponges, etc. According to his observation, the large majority of the deaths were due to septic infection. He would have no hesitation in opening the peritoneum in any case where the patient's life was in question. There was very little danger of increasing shock thereby, and if the shock was very marked, there was every reason to believe that severe hemorrhage was taking place, so that the prompt performance of laparotomy was urgently demanded under the circumstances. After performing operations in the abdominal cavity, he not infrequently washed out the latter with a solution of bichloride of mercury, one to ten thousand, following this with the injection of simple hot water.

CHLOROFORM-MANIA.

Dr. Rehn adds to the literature of chloroform-mania two new cases, which he describes in the *Centralblatt für Med. Wiss.* of January 2, 1886.

Case I.—A workingman, 42 years of age, who, up to his thirty-ninth year, enjoyed good health, becomes a morphomaniac on account of violent pains in the inguinal region. And when later even larger doses of morphine failed to afford the desired relief he began to inhale chloroform, and soon accustomed his system to the drug to such a degree that he could consume a wine-bottleful within twenty-four hours. Rehn presents the following clinical index as the sequelæ of the habitual chloroform inhalation of the patient: great depression, irritability, weak memory, lowered intellectual faculty, loss of appetite, emaciation, appearance of gray hairs, œdema, engorgement of the liver, icterus, weak and frequent pulse, and impotency. Withdrawal of the drug made all these symptoms disappear, relapses brought them out again. Later the patient became an alcoholist, and showed psychical alterations such as appear in the beginning of a progressive paralysis.

Case II.—A lady, 70 years of age, used for thirty years, alongside of large quantities of alcohol and ether, also for variety's sake, chloroform, partly internally, partly by inhalation. The actual quantity of chloroform consumed could not be determined, though it was surely large. In her seventieth year she was seized with grave delirious paroxysms; after their disappearance she "swore off" chloroform and returned to alcohol and ether; of ether she took very large quantities. Rehn infers that chloroform exerts its destructive influence not only upon the red blood-corpuscles, but also upon the nerve and brain substances.

HYPODERMIC INJECTIONS OF COLD WATER IN SCIATICA.

Dr. D. H. Lewis, of Lone Pine, Pa., writes to the *New York Med. Record* for January 23, 1886, that he was consulted by a man 60 years of age, who was suffering greatly from sciatica. He had been treated for the past eight weeks by two physicians, and had run through the entire list of anti-neuralgic remedies. Being desirous of trying something which was at least new to the patient, Dr. Lewis determined to employ hypodermic medication, and having no drug handy which he cared to use, he filled the syringe with cold water and injected the fluid deep down behind the trochanter. The following day the patient returned and said that he was feeling much better. The injections were ac-

cordingly repeated every third or fourth day for a period of three weeks, by the end of which time a complete cure was obtained. The writer has since treated a number of cases of sciatica in the same way, with equally gratifying results. He thinks that possibly many of those cases which have been reported as cured by the injection of certain drugs, such as cocaine, might have terminated in an equally favorable manner had simply cold water been used.

ON TARDY SYPHILIS.

To the one hundred and four cases of hereditary tardy syphilis heretofore collected, ZEISSL adds in the *Wiener Klinik* (Heft vii., 1885) four new cases which came under his personal observation.

CASE I.—A young man, 18 years of age, whose three younger brothers and mother are healthy; about the father's history no statements could be obtained. Patient showed in his second month of life pronounced rachitic symptoms, in his third year swelling and pain in the knee-joint, in the fourth year a diffuse parenchymatous keratitis, and in his eighteenth year an ulcer on the posterior wall of the pharynx, which healed under mercurial treatment.

CASE II.—A girl, 15 years of age; two elder sisters and brothers and mother are healthy; of her father nothing positive could be ascertained. In her ninth year she had ulcers on the cornea on both eyes, in her tenth an ulcer on the upper lip, which healed in six to eight weeks. In her fifteenth year an ulcer appeared on the cutaneous nasal septum, which penetrated the cartilaginous septum, and later healed promptly under specific treatment.

CASE III.—A boy, 9 years of age; his father contracted syphilis three years before his marriage; his mother and other younger sisters and brothers are healthy. Three months ago a serpiginous ulcer appeared on the chest; the septum narium was suddenly attacked and perforated, and ulcerations broke out on the hard palate. All ulcerations healed quickly under antisyphilitic treatment.

CASE IV.—A student, who had never had a coitus; his parents were believed to be healthy. In his seventeenth year an ulceration appeared on the right wing of the nose, which led to a perforation of the septum. Later, ulcers broke out on the palate and uvula. Injections of corrosive sublimate healed all ulcerations; relapses occurred, but the specific treatment ultimately produced a permanent cure.

SALICYLATE OF LITHIUM IN ARTICULAR RHEUMATISM.

M. VULPIAN has read before the Académie de Médecine a summary of the results of his experiments with salicylate of lithium in articular rheumatism. He states that his experiments indicate that lithium salts are not so poisonous as they are believed to be. Salicylate of lithium is not more dangerous than salicylate of sodium, and can be administered in almost equally strong doses. In acute articular rheumatism, salicylate of lithium relieves the pain which often remains in the joints after the swelling has disappeared; whereas colchicum and salicylate of sodium have no effect. M. Vulpian believes that salicylate of lithium is especially beneficial in fibrous rheumatism. In progressive subacute rheumatism, he has seen salicylate of lithium produce great improvement. Salicylate of sodium has also been successful in such cases, and produced amelioration of the patient's condition; but both greater and more lasting benefit is obtained by salicylate of lithium. In chronic articular rheumatism M. Vulpian has found salicylate of sodium useless, whereas salicylate of lithium has had a marked effect on the joints, which become less swollen and less painful than before the treatment. In order to obtain evident results, 4 grammes (60 grs.), sometimes 4½ or 5 grammes, must be given daily. Larger doses are followed by toxic symptoms. This drug sometimes induces headache and deafness, but is never followed by the distressing noises which characterize treatment by salicylate of sodium. The headache and deafness disappear quickly.—*British Med. Journal*, January 2, 1886.

ON KAWA, A POWERFUL ANÆSTHETIC AND SPINAL DEPRESSANT.

DR. L. LEWIN, of Berlin, the well-known therapeutist, has the merit of instituting the first experiments with a drug which possesses such distinctly pronounced and powerful physiological properties that its utilization in therapeutics is scarcely questionable. We condense from his highly interesting paper in the *Berliner Klinische Wochen.* of January 4, 1886, the most significant topics. Kawa (Kawa-Kawa, Yakona, Yangona) is the root of Piper methysticum, a shrub about three yards high, growing upon the various islands em-

braced under the name of Polynesia in the South (Pacific) Ocean. The shrub is especially found on the New Hebrides, the Sandwich, Feejee, and Samoa Islands, where the use of the plant in some form or other is exceedingly old, and has even been described by the first discoverers of these islands. The kawa-drinks reigned supreme in these islands until the introduction of alcohol; but even to this day kawa is a favored drink with all natives of Polynesia, where kawa-houses exist like our cafés. The preparation of kawa is looked upon by the natives as a solemn and religious affair, which takes place publicly under various ceremonies. Special men and women are selected to chew the root, then it is placed in vessels, water added, and stirred with the hands. The firm masses are then dissolved, and the kawa-drink is ready for use, which announcement is followed by the jumping, dancing, and crying of the assembly, which up to this point has observed silence. The drink is served under prayers in half cocoa-shells, and appears as a grayish, dirty-looking fluid.

The assumption that during the process of preparation a fermentation takes place is erroneous.

Examined chemically the root contains forty-nine per cent. of starch, numerous salts, and a non-nitrogenous body called kawahin. Lewin found besides another body which he termed yangonin. Both these elements, however, have been experimentally proved to be inert. The actual active principle is a resinous mass of a fatty, aromatic taste, pungent and hot like pepper.

Local Action.—The kawa-resin increases the salivary secretion, and produces loss of sensitiveness immediately or shortly after application on all parts of the body. Taken into the mouth, one receives the sensation as if the part were burnt. Applied locally to the pharynx, the part grows anæsthetic even in the most sensitive persons. Gradually the increased salivary secretion and the anæsthesia of the pharynx disappear again. Applied to the conjunctiva of cold- and warm-blooded animals, both conjunctiva and cornea lose the power of reaction to even the strongest irritation. The eyeball can be pressed, pinched, and rotated at will without producing a trace of a reaction. In guinea-pigs this condition may last for hours; the eyeball appears more prominent by the regression of both lids, but the pupils retain their normal reactive capacity to light. The return of sensitiveness and reaction is very slow and gradual. If the kawa-resin be injected into the connective tissue of an animal, anæsthesia ensues in the sphere surrounding the point of injection; mechanical and chemical irritation elicit no reflex response. In a frog the electric irritability was found likewise to be reduced. At and surrounding the point of application no inflammatory symptoms appear, but, on the contrary, marked ischæmia.

Constitutional Action.—Ingested, the kawa-drink produces a sensation of comfort, peace, and felicity, and never, as in the case of alcohol, desires of altercation or fight. In the mouth a peculiar, pleasant sensation of coolness is received, and may last for one to two hours. Consciousness and reason are in no way depressed, as in the case of opium, but the mental faculties are rather heightened. Fatigue and hardships appear easier borne under the influence of the drug. If larger quantities of the kawa-drink are ingested, a state of happy freedom of cares and a dreamy consciousness set in. The limbs grow feeble and powerless; gradually the will loses its control over the motor apparatus, rendering co-ordinate movements impossible. The person soon lies down, and gradually falls asleep, or rather in a condition of somnolency.

Nausea and headache, paresis of the extremities, and a nervous trembling are the usual sequelæ of kawa-ingestion after the somnolency has passed off. The system soon grows accustomed to the drug, and the kawa-habit is readily established. It has been asserted that the habitual use of kawa produces pityriasis, though this is questioned by many observers.

Animal Experiments.—If kawa is administered to frogs per os or hypodermically, the animals soon grow feeble, the head sinks, and a state of motor incapacity ensues. Though voluntary motion has disappeared, reflex action is still active. Later no response follows upon even the strongest irritation save the electrical one, the efficacy of which is retained longest.

Lewin saw frogs in this condition for nine consecutive days; only the reaction to light and the slow cardiac action still testified to the life of the animals.

A general central paralysis is produced by kawa in a manner that the anterior horns of the gray substance, the motor ganglia, are first attacked, and later the sensible elements in the posterior horns of the gray substance, and lastly the brain ganglia. In birds, rabbits, cats, we obtain the same physiological

effects. At first motion is apparently increased, the animals endeavor to run or fly away; then this desire vanishes, and the animal lies down; temperature, respiration, and pulse fall gradually and simultaneously.

An alcoholic solution applied by the mouth or subcutaneously produces a deep sleep within a few minutes. Part of the kawa-resin is eliminated with the urine. The gastric mucous membrane shows, after death, an ischæmic appearance. These interesting observations clearly demonstrate that in kawa we have to deal with a drug of a most energetic activity, and that its power to produce complete local ischæmia and anæsthesia, reduction of the excitability of the spinal motor apparatus, and besides psychical quiescence, can be unquestionably utilized in therapeutics. Whether the drug has at the same time a diaphoretic, diuretic, or tonic action (to the stomach) has not yet been tested, though it is asserted. The drug is likewise credited to be able to reduce corpulency, and to favorably influence the gonorrhœal process.

Further observations and experiments will no doubt determine the proper therapeutic virtues of the drug, which at all events must be regarded as a valuable acquisition to our remedial resorts.

A NEW METHOD FOR THE REMOVAL OF FOREIGN BODIES FROM THE NOSE.

Dr. D. Bryson Delavan, of New York, writes to the *New York Med. Record* for January 23, 1886, as follows: "The presence of a foreign body in the nasal cavity is usually attended with marked swelling of the neighboring mucous membrane. Its extraction by any of the means in common use is accompanied with pain, often of great severity, and is often followed by a copious hemorrhage. The swelling offers, of course, a serious obstacle to the extrusion of a hard body, while one which has increased in size from the imbibition of water becomes all the more firmly impacted. Hence, in attempting the removal of the body, more or less laceration of the membrane is likely to occur. The pain, with difficulty tolerated by an adult, causes a child to become in almost every instance unmanageable, so that an anæsthetic is required. The hemorrhage is usually controllable after the lapse of a few minutes, but may, meanwhile, cause considerable annoyance. From our knowledge of the physiological action of cocaine upon the nasal mucous membrane, it is evident that, by its use in these cases, all of the above difficulties may be overcome; for applied to the nose, the mucous membrane becomes strongly retracted, the sensibility to pain lost, and the blood-vessels exsanguinated. Thus, the calibre of the fossa is greatly widened, the irritation and consequent resistance done away with, hemorrhage prevented, and the removal of the foreign body thereby greatly facilitated. To carry out the method, the occluded nostril should first be cleansed with a spray or a gentle current of some lukewarm alkaline solution, after which a four per cent. solution of cocaine should be applied to the mucous membrane. When its effect has become complete, the extrusion of the body should be attempted by directing the patient to blow forcibly through the affected nostril. Failing in this, it should be drawn out by some suitable instrument. Should the patient be too restless to make this practicable, an anæsthetic may still be administered. In cases of invasion of the frontal sinus or antrum of Highmore by insects or larvæ, cocaine should be applied to the membrane before the administration of chloroform or ether, in order that the canals leading to these cavities may become as patent as possible, and thus the vapor of the anæsthetic be admitted very thoroughly to the intruder's presence. The insensitiveness of the membrane produced by the cocaine will, in these cases, certainly add to the comfort of the sufferer should it be necessary to inject, or still better, to spray the nose with chloroform."

ON INFANTILE APHASIA.

Prof. Bernhardt, of Berlin, presents his views about infantile aphasia in a little pamphlet (*Deutsche Medizinal Zeitung* of January 1, 1886), from which we abstract some salient points.

1. Genuine infantile aphasia is not so common an affection as is commonly believed; about ninety cases are all that are recorded.

2. Its etiological factors are nearly identical with those producing the affection in the adult phases of life, with special consideration, though, of the various characteristics of childhood. The principal causes are reflex conditions after indigestion, entozoa, psychical irritation, infectious diseases, acute and chronic brain-affections.

3. Infantile aphasia is chiefly a symptom of cerebral infantile paralysis.

4. Hemiplegia does not necessarily exist along with aphasia.

5. The affection may disappear spontane-

ously, especially after prudent and systematic physical exercise.

6. The nature of the cerebral lesion in cases of aphasia existing since birth is not known, since no autopsies are recorded. The therapeutics of the affection is little effectual; antiphlogistic measures at first, and later the galvanic current, together with the preparations of iodine and bromine, suggest themselves.

CHLORIDE OF CALCIUM AS A THERAPEUTIC AGENT.

We have already referred to this agent in the treatment of scrofulous enlargement of glands, and the views which we have published are confirmed by a recent paper by MR. ARTHUR DAVIES in the *Practitioner*, January, 1886. He reports three cases which he has selected as types of numerous others, which seem to show that chloride of calcium deserves to be ranked as a very useful agent in cases of lymphatic glandular enlargement. The first case may fairly be considered one of lymphadenoma, seeing that the glands were of a stony hardness and had never suppurated. The other cases were of a scrofulous nature, and the exhibition of this drug in these cases was almost always attended with beneficial results. It is useful to note to what extent the drug, cautiously increased, may be tolerated. His method of administering was to give at first 10-grain doses three times a day in 30 drops of water. This, after a week or so, may be gradually increased until even as much as 40 grains may be taken three times daily without producing unpleasant symptoms, with the exception of an occasional scalding sensation in the morning when passing water. For children, of course, the dose must be smaller. Three grains may be given three times daily, and increased to 10 grains. In spite of apparent failure, Mr. Davies advises that this treatment should be persisted in, as possibly twelve months may elapse before improvement takes place. He states that the chloride of calcium is perfectly useless in cases where suppuration has commenced.

LEUCOPLACKIA OF THE MOUTH.

The syphilitic element, which especially in cutaneous affections forms so frequently the etiological basis, is no doubt often overlooked, but, *vice versa*, it may happen that the practitioner suspects a specific taint where none exists. Both of these diagnostic errors, which of course render the treatment of the case fruitless, can be avoided by a careful attention to the characteristic features of the differential diagnosis.

Leucoplackia oris (psoriasis, tylosis, ichthyosis, or keratosis oris) presents, both regarding its locality and its appearance, a sufficient resemblance to the so-called mucous patches (plaques muqueuses) that its distinctive character and symptoms deserve special attention.

DR. SCHECH, of Munich (*Deutsche Medizinal Zeitung* of January 7, 1886) is not certain whether the affection ought to be classed with the chronic inflammations or the neoplasms. In view of its causes, which will be considered below, we do not hesitate to regard leucoplackia as a product of irritation and to place it in the category of chronic inflammations.

Favorite seats of the affection are the mucous membranes of the lips, cheeks, and of the upper and lateral sides of the tongue. We find it consisting of circumscribed reddish patches; the epithelium of the locality grows cloudy and lends to the mucous membrane a milky appearance, as if the place had been touched by the caustic pencil. Later the patches increase in size, become confluent and look marbled. A silver-gray or yellowish-white color is also invariably present.

The complaints of the patients are variable, usually they have a stiffness and impeded motility of the tongue and lips. The affection may limit itself to a couple of months, but may also extend over twenty to thirty years. A complete cure is rather a rarity.

Characteristic of leucoplackia, in contradistinction from the mucous patch, for which it is often mistaken, is the persistency of the eruption and the silver-gray color. The syphilitic patches usually are of short duration, and soon change into ulcerations, and their color is a dirty gray. Besides, the leucoplackic eruption is of a light and yielding consistency, while those of syphilis are hard and resistant. Ultimately, of course, the inefficacy of a specific treatment would reveal its true nature.

The prognosis is unfavorable not only on account of the rarity of a complete cure and the usual length of its duration, but also and chiefly on account of the predisposition to carcinoma which leucoplackia is apt to create. Shech thinks that excessive smoking is the most frequent cause of the affection, though no doubt other agencies, such as the chewing of tobacco, dental caries, habitual use of pungent and acrid victuals, alcoholic excesses, gastric affections, and anæmia may also participate in its causation.

Zeissl strangely regards the affection as produced by corrosive sublimate (not by syphilis), and states that in great smokers it becomes especially marked. Kaposi, on the other hand, brings the disease in direct communication with syphilis.

The treatment must consist in the first place in the removal of all conditions which might be concerned in the causation of the disease. The epithelial layers then have to be removed by an alkaline mouth-wash, preferably the bicarbonate of sodium (10 to 300). In case of existing great pain 10 to 20 per cent. solutions of the muriate of cocaine are indicated. The application of a caustic is to be avoided by all means.

TREATMENT OF CHRONIC RHEUMATISM.

At a meeting of the New York Academy of Medicine, Section on Materia Medica and Therapeutics, held December 16, 1885, Dr. Peters, by special request, read a paper on the treatment of chronic rheumatism (*Medical Record*, January 23, 1886). He merely alluded to chronic rheumatisms of the heart, pleura, membranes of the brain and spinal cord, of the eye, ear, throat, kidneys, uterus, etc., and quickly turned his attention to chronic rheumatisms of the joints.

Almost all rheumatisms are connected with an excessively acid condition of many of the secretions and excretions, including the saliva, perspiration, and urine; even the chyme and blood are less alkaline than they should be. Next is the excessive preponderance of fibrin in the blood, and the great and early destruction of red blood-globules.

Alkalies form the natural basis of the treatment of almost all rheumatisms, and the first question which arises is whether the potassium or sodium salts shall be used, or both. As the phosphates and potassium salts naturally predominate in the red corpuscles and in the formed tissues, while the chlorides and sodium salts are most abundant in the serum and plasma, and in all the infiltrating fluids of all the organs of the body, both potassium and sodium may have to be used; and they will so aid and compensate each other that neither will have to be given in excess. In chronic rheumatisms Dr. Peters preferred the milder and more tonic sodium and potassium salts, such as the phosphate of sodium, etc. This is a good and mild laxative when purgatives are required; it also lessens the acidity of the mouth, stomach, and bowels which is apt to be present, renders the contents of the thoracic duct and the blood more alkaline, and makes the urine and perspiration alkaline. It also lessens the quantity of fibrin in the blood. It is a cooling and slightly antipyretic remedy, and may be used in strong or saturated solution as a local application to chronically swollen joints. In chronic arthritic rheumatism Charcot prefers the carbonate of sodium, of which he gives from 7 to 10 drachms a day, even to old and feeble women, and says he has never seen anæmia or any dissolution of the blood caused by it; on the contrary, his patients even grew stouter and stronger, possibly from the better digestion of sugar, starch, and fat which is caused by this and other alkalies. It also aids in the destruction of an excess of fibrin in the blood, and helps the liver in its great work of destroying fibrin.

Phosphate of sodium is a gentle and pleasant remedy, which may be given in about the way that citrate of potassium and Rochelle salts are usually given; the latter in ½ or 1 ounce doses when laxation is required, and either in 1 or 2 drachm doses when their alkaline effects are more desired. It neutralizes all acids, even that which is abnormally present low down in the large bowels; and moderates the excessive acidity of the normal acid phosphate of sodium in the urine, and then helps to keep uric acid and the other urates in solution.

But potassium is the natural alkali of the red blood-globules, of the muscles, fibres, and all other formed and solid tissues; and citrate of potassium, and even Rochelle salts, which is a tartrate of sodium and potassium, may reach not only the serum of the blood, but the blood-globules and the parenchymatous structures, when rheumatism is firmly lodged in the latter.

Benzoate of sodium is another non-depressing sodium salt, although it is somewhat antipyretic when given in large doses. It is a solvent of uric acid, increases the elimination of urates in rheumatic lithiasis, and seems not only to convert uric acid into hippuric, but also to liberate a portion of the products of disassimilation in the form of soluble hippuric acid instead of insoluble uric. In delicate and sensitive patients benzoate of sodium may be given with aromatic spirits of ammonia, thus: Sodii benzoatis, ℥vi; spts. ammon. aromat., ℥vi; spts. myristicæ, ℥vi; spts. chloroformi, ℥ii; spts. gaultheria, ad ℥vi. Dose, ℥i to ℥ii in water.

The hippurate of sodium has been suggested lately in doses of 5 to 30 grains. It tends to produce soluble urates. A favorite prescription with Granville is: Sodii hippuratis, ℥ii;

glycerini, ʒvi ; aq. cinnamomi, ad ʒvi. Dose, ʒii to ʒviii, three times a day.

The tauro-cholate of sodium also holds uric acid in solution, and is said to render the stools characteristically rich in bile without causing purging. The usual dose is 3 to 6 grains, and it is said to be most useful in obese rheumatic patients, in whom the excess of fat slowly melts away. It is doubtful whether it is more useful than purified ox-gall.

The salicylate of sodium is only useful in the acute aggravations of chronic rheumatism. It does not destroy the rheumatic element in the blood.

Valerianate of sodium is declared by Granville to be very useful in weak and very sensitive patients. He even thinks its therapeutic value is decidedly greater than that of most of the other salts of sodium. It relieves the nervous trouble and hyperæsthesia of rheumatism and gout quite effectively, and he cannot help thinking that it also promotes the activity of the absorbents, thus tending to remove congestion, exudation, and even thickening and hardening about rheumatic joints. Usual dose, 1 to 5 grains.

It may be assumed that all the good that can be got out of sodium will be obtained by these preparations. Charcot always gives quinine, also, when he uses sodium or potassium in large and long-continued doses. Others prefer salicine as an anti-rheumatic tonic. Both prevent the excessive formation of uric acid. But the tartrate of potassium and iron is the best tonic against the anæmia and debility of chronic rheumatism. It is pleasanter and better than the muriated tincture.

But, as before said, the sodium salts only reach the liver and pancreas, the intestinal juices, the chyle and serum of the blood. They do not penetrate into the interior of the red blood-globules, nor into the parenchyma of the muscles and fibrous tissues, which the potassium salts do. The acetate of potassium, quickly supported by iron, is a most valuable remedy in subacute rheumatism, and especially in those forms which are liable to frequent acute exacerbations.

But citrate of potassium is a much more pleasant and less depressing remedy in very chronic cases.

There are, pathologically, two great varieties of chronic rheumatic joint-disease : 1, the fibrous ; 2, the dendritic. In the fibrous form the tendency of all the exudations is fibrogenous. The inflammatory products or thickenings, instead of remaining in the soft and gelatinous stage of fungoid granulation, become firm and tough. The new cells are converted into fibres, and these harden and contract ; even the inner surface of the synovial membrane is made hard. The normal dendritic growths of the villi are conspicuously absent, and in place of them are thick folds of fibrous tissue. The synovial membrane itself is infiltrated with fibrinous substance, composed entirely of fibre-cells, both fusiform and oval ; only a few round cells are to be seen.

The favorite remedy for this state is the muriate of ammonia, administered as freely as iodide of potassium is often given. If fears are entertained that it will prove too debilitating, it may be aided by aromatic spirits of ammonia, or with quinine, or Huxham's tincture of bark ; although Granville prefers the tincture of serpentaria, which he thinks has a specific effect. The muriated tincture of iron should not be forgotten.

Muriate of ammonia is a solvent and liquefacient remedy which tends to render all the secretions more abundant, while at the same time it reduces the plasticity of the blood, and destroys fibrin.

It acts upon the kidneys, and if long continued will cause emaciation, commencing first with absorption of fats and then of soft fibrin. It is used both internally and locally against fibrous thickening of the ligaments and tendons about rheumatic joints. Some go so far as to think it almost specific against all cirrhotic affections of the connective tissues. In chronic rheumatic synovitis it is said to break down all the exudations into a thin mucoid substance which is finally absorbed. It also has a powerful effect on the formation of urea : it is not only converted into urea, but helps to break down uric acid into urea, and aids in the excretion of both. It is also supposed to be really useful in so-called rheumatic neuralgias, when the fibrous sheaths of the nerves are involved. The dose is from 5 to 15 grains up to 150 grains a day.

Its great rival is corrosive sublimate, which may be given in doses of $\frac{1}{24}$ to $\frac{1}{16}$ or more of a grain, in Huxham's tincture of bark, or in the tincture of serpentaria.

The next great variety of chronic rheumatic arthritis, or synovitis, is the dendritic, in which the folds or fringes of the synovial membrane are greatly developed, so as to nearly resemble papillomata. For this sabina has been suggested, especially when it occurs in females at the menopause, or where there is decided

uterine derangement. Sabina once had a great repute, which was not undeserved, in chronic rheumatism and gout, for which it was employed both internally and locally to the affected joints.

Pulsatilla is a remedy which is supposed to act specifically upon almost all the mucous and synovial membranes, especially those of the small joints, and has a well-assured reputation in chronic rheumatism. It is most useful in subacute and chronic arthritic rheumatism when there is little or no fever; also in what is called rheumatic gout in females, with catarrhal and rheumatic disorders of menstruation.

But next to carbonate of sodium, Charcot prefers iodine to the muriate of ammonia and sabina; not iodide of potassium, but tincture of iodine, in doses steadily increased from 8 to 10 drops in twenty-four hours up to 30 to 60 drops. He gives it during meals in water slightly sweetened, or in a glass of Spanish wine, which he says is better. He continues it for several weeks, or even months, and says it never gives rise to symptoms of iodine-poisoning. Probably its effects are largely counteracted by the starch in the food. Granville also thinks iodine the most potent and suitable medicine to decompose urates in the blood, and says it relieves chronic rheumatic pains so promptly that he has rarely to use anodynes. But he always gives it combined with muriate of ammonia and chlorate of potassium, thus: Ammonii chloridi, ℥ss; potassii chloratis, ʒii; tinct. iodinii, ʒii; glycerini, ℥ss; aq., ad ℥xii. Dose, from a tea- to a tablespoonful two or three times a day. The taste of this mixture is more disagreeable than that of the tincture of iodine. One of the best prescriptions is that of Dr. Buckler, viz.: Iod. potass., gr. ii; iodid. ferri, gr. i; iodine, gr. $\frac{1}{16}$; ext. conii mac., gr. i. Make one pill, to be taken three times a day. These pills are easily taken, and are said to be particularly efficacious in chronic articular rheumatism, even where there is an anæmic, scrofulous, or syphilitic taint. The so-called nodosity of the joints has been successfully treated with iodine.

Arsenic is the great rival of corrosive sublimate, iodine, and muriate of ammonia in chronic rheumatism of the larger joints. Occasionally it produces marked amelioration, but it often fails, and is said to be useless in the most inveterate cases. It generally aggravates at first.

Phosphorus is a more reliable remedy in arthritis deformans, and phosphate of ammonia forms more soluble salts with uric acid than any preparation of sodium or lime. Uric acid and the urates disappear rapidly from the urine made after its use, and pains and swellings of the joints are relieved as rapidly as from any preparation of sodium or potassium. It is fully equal to the other alkalies, and preferable to most of them in delicate and feeble subjects. It maintains a highly alkaline condition of the blood, has a distinctly alkaline reaction itself, and renders the urine alkaline.

THE EXTRACT OF MALE FERN IN TÆNIA.

Behrens eulogizes the extract of male fern as by far the most efficient anthelmintic of the pharmacopœia, and in the *Deutsche Medizinal Zeitung* of January 7, 1886, reports its successful employment in fifty-two cases out of fifty-three treated. Fifty patients discharged the tapeworm after having taken a single dose of 5 grammes (75 grains); of the three remaining patients, two discharged the worm after one more dose of the drug. In two instances the heads of the worms were found. This rather remarkable success in the treatment of tapeworm Behrens believes to be attainable only if a certain methodical procedure is observed. The patient is, on the preceding day, not allowed to eat anything after dinner excepting a salted herring in the evening; for the thirst thus occasioned beer is allowed. On the following morning the patient takes the drug on an empty stomach, according to the following formula:

℞ Extr. filic., 5.0 (75 grs.);
Gum. arab., 2.5 (37½ grs.);
Aquæ dest., 5.0 (1½ ʒ);
Syr. simpl., 15.0 (½ ℥). M.
S.—Take at once.

A quarter of an hour after, 1 ℥ of castor oil is taken.

This drug, which for its anthelmintic virtues has been known ever since the days of Pliny (who advocates its association with scammony), is well deserving of the author's praise.

In this connection it occurs to us that male fern, at the close of the last and the beginning of this century, formed an ingredient of several nostrums which enjoyed great repute for their vermifuge properties. It constituted the specific of Madame Nouffer, the widow of a Swiss military surgeon, who received eighteen thousand livres for the publication of its composition; later it was the Herrenschwand remedy, and finally the specific of Matthieu, the Berlin apothecary, who sold it

to the Prussian government for the prize of a title and a pension. The medical college of Würtemberg likewise bought and paid amply for this therapeutic secret. In all these cases drastic purgatives were given, either along with or after the preparation of fern.

In tænia lata (bothriocephalus), or unarmed tænia, the drug is far more efficient than in tænia solium, or armed tænia; hence we find the drug especially esteemed in Russia, France, and Switzerland, where the former variety prevails.

So much stress is laid upon systematic administration of male fern by all who have used it most extensively, that we shall describe several of the most approved methods, as cited by Stillé. Wawruch treated two hundred and six cases, nearly all of tænia solium, according to the following plan:

Preparative Treatment.—During four to five days a solution was given every day containing 20 grains of chloride of ammonia, the patient meanwhile taking no food but a thin broth at each meal.

Expulsive Treatment.—The night previously a simple injection was given. The following morning a bowl of thin soup without salt was eaten, followed in an hour by two ounces of castor oil in two doses. In the interval between these from ½ to 1 drachm of powdered male fern was given in two or three doses, and an enema of milk and oil. Some time after the last dose of fern a drastic purge of calomel and gamboge was given, and under its operation the tænia was generally discharged. This method occasioned a good deal of pain, and often vomiting, rendering the use of emollients and narcotics necessary.

The treatment of Albers, of Bonn, and which proved successful in a large number of cases, was almost exactly the same as that just described, except that the ethereal extract was the preparation of fern employed. Lambert preceded the administration of the fern by a diet of herring, onions, and similar crude articles. Trousseau's method, which, he states, was very successful, is as follows: First day, absolute milk diet; second day, 15 grains of the ethereal extract of male fern to be taken fasting, and repeated every half-hour until four doses are taken; third day, repetition of the extract as on the preceding day. After the last dose about 2 ounces of syrup of ether, and, in half an hour later, an emulsion containing 3 drops of croton oil.

Peschier used the oil (volatile extract), and in doses of from 8 to 25 drops, and cured one hundred and fifty cases in a short time with it. Ebers, of Breslau, uses the alcoholic extract; Fouchon, of Neufchâtel, the oil in gelatin capsules. The simple powdered root, however, is probably the most eligible preparation.

NEW PURGATIVES.

A few years ago, Dr. Noel Gueneau de Mussy communicated to the Academy of Medicine Professor Rutherford's researches on different medicinal substances. M. Desnos, according to the Paris correspondent of the *British Medical Journal* (January 2, 1886), has tested these experiments on four different bodies,—baptisin, sanguinarin, juglandin, and phytolaccin. They are all resinous extracts from American plants. They are brown-red powders, very hygrometric, and have a saltish taste. M. Desnos used them in the form of pills of from 5 to 10 centigrammes (¾ to 1½ gr.). Baptisin was administered to fourteen patients; sanguinarin to four; juglandin to thirteen; and phytolaccin to seventeen. The patients did not remain in bed all day, in order not to encourage constipation. The general dose was 30 centigrammes (about 4.6 grains) daily, administered in two separate doses. If more were given, a third dose was taken at eight o'clock at night. The patients generally had a stool the following day or night. In the case of patients habitually constipated, they gradually had regular motions. Baptisin in doses of 30 centigrammes was regular in its action, but frequently provoked colic. Sanguinarin, considered by Professor Rutherford as a never-failing cholagogue and purgative, was perfectly inert, though given in doses of 60 centigrammes. The action of juglandin, Dr. Desnos says, is the same as that of baptisin. In two patients, after it had been administered, the stools contained blood; one was convalescent after typhoid fever, and the other was rheumatic and dyspeptic. Phytolaccin, given in doses of 10 or 20 centigrammes, is regular in its action, and is not accompanied with colic.

TREATMENT OF ACUTE PROSTATITIS WITH VERY HOT WATER.

The singular though incontestable experience that in many inflammatory processes both heat and cold, though agents with diametrically opposed properties, possess often equal curative virtues, finds an apt illustration in the affections of the genital organs. In orchitis, for example, the ice-treatment enjoys

great repute. In prostatitis, however, better results have been obtained with hot water.

In the *Gazette Hebdomadaire* of January 1, 1886, DR. RECLUS recommends compresses plunged in hot water and hot water enemata as the *par excellence* treatment of acute prostatitis. Reclus selects of the numerous cases thus treated the following as especially suitable to represent the advantages of this treatment:

1. A physician, æt. 31, called for treatment on account of a dysuria vesicalis appearing at the end of a blennorrhœa.

Examination of the parts revealed an enormous tumefaction of the prostatic gland, which was felt as a large tumor by the finger inserted in the rectum. There was intolerable pain before and after micturition. Compresses immersed in very hot water and rectal hot water injections were ordered, and almost instantaneously considerably diminished the pain, the vesical tenesmus, the tumefaction of the gland, and the other inflammatory symptoms. In three days a complete cure was effected by these simple appliances.

2. A professor, æt. 56, called for treatment on account of a prostatic trouble necessitating urination every couple of minutes, especially at night. As in the former case there was tenesmus of the bladder, and also of the rectum, great pain and enlargement of the prostatic gland, which could be found beating under the finger inserted into the rectum. Again the compresses were ordered to be applied to the perineum, and the injections to the rectum morning and night, and resulted in an immediate improvement and a complete cure within a few days. Both pain and the desire for frequent micturition never returned until a relapse occurred a year after, provoked by dietetic errors committed during a scientific congress, when the same means proved again successful.

3. A young man was treated for a neuroma on the mastoid portion of the temporal region, when, after removal of the tumor by the bistoury and the healing of the wound by first intention, suddenly, no doubt by some metastatic process, a prostatitis set in. Retention of the urine ensued, which rendered the use of the catheter necessary, which of course was very painful. The hot water treatment was ordered, and relieved in the course of four days both pain and tenesmus permanently.

This equally simple and energetic treatment cannot be too well recommended as an efficient means to allay the inflammatory process, no matter whether of a circumscribed or a diffuse nature, and to prevent subsequent suppuration.

CHOREA SUCCESSFULLY TREATED WITH HYOSCYAMINE.

In a clinical lecture recently delivered in the Pennsylvania Hospital by PROF. DA COSTA (*Med. Times*, January 23, 1886), a patient was exhibited, suffering from what Dr. Da Costa described as the worst case of chorea that he had ever seen. The patient was a boy about 11 years old, pale and weakly, and described by his friends as having always been nervous.

Four weeks before the date when he was admitted (on the 14th of December) he had an attack of acute rheumatism, which involved all the larger joints of his body. The rheumatism lasted about three weeks, but as it declined choreic symptoms began to be manifested. His hands and arms were first affected, and afterwards his legs.

When admitted, he was actually unable to walk; he was even unable to feed himself, and seemed in risk of starvation. He was wretchedly weak and emaciated. He could perform no co-ordinated movements with his arms or legs, and unless there was always somebody about to give him a drink of water and food he would have perished. This was not due to actual want of power in the muscles, but to the impossibility of performing any voluntary act requiring co-ordinated movements; yet when food was placed in his mouth deglutition was readily accomplished. When admitted he could not speak, he could not articulate a word. He could not put out his tongue, although he could open his mouth and move his jaws, but he could not ask for food. His expression was that of an imbecile, and he was reduced to a mere shadow.

At first his arms and legs were constantly moving, both sides being equally affected. No power of grasp existed in his hands, though sensation did not seem impaired. He complained of pain when he was pinched. The patellar reflex was normal, and not exaggerated. No marked change in the electrical reactions was observed. His pupils were very much dilated; his pulse was only 50 per minute, and rather weak; there was a systolic mitral murmur heard at the apex. These involuntary muscular movements did not continue at night, when he was asleep. His urine had been examined, but neither albumen nor sugar was detected. His bowels tended to constipation.

The ordinary remedies for chorea act

slowly; arsenic, though one of the best of our therapeutic agents for this disorder, acts slowly; it takes time, and the loss of time here might be fatal. Dr. Da Costa then recalled a case of tremor which he had seen rapidly influenced by hyoscyamine, the active principle of hyoscyamus niger. He concluded to try it here. He ordered him to take $\frac{1}{200}$ grain to begin with, a decided dose for a boy of his age; but, not finding any marked influence, he concluded that it would be advisable to increase the dose to $\frac{1}{100}$ grain, given three times a day. Now the effect was admirable. From the first few days the boy began to improve, and at this time he had some dryness of the throat and wanted his mouth frequently moistened. He soon became brighter in his mind; he took more interest in what was going on; he moved voluntarily in bed, and tried to help himself to food. His voice also returned, and he left his bed and began walking around the ward. After this his recovery was rapid and uninterrupted. He has had no other treatment than the hyoscyamine, and he has now so much improved, though he is still somewhat pale, that he may be looked upon as having recovered. He can sit quietly; he has power over his hands, both in co-ordination and in grasp, although his grasp is still a little feeble. He walks and stands now without falling. His pupils are dilated, although not much.

The systolic apex-murmur persists: it is a chronic mitral regurgitant murmur. In every other respect the boy is nearly well.

Dr. Da Costa then referred to one or two points of clinical interest in connection with this case: first, some points which have nothing to do with the treatment; and, secondly, some which bear upon the treatment.

In the first place, this attack of chorea was clearly of rheumatic origin. It came on at the end of an attack of acute rheumatism. It is true that the boy was previously feeble and ill nourished, and that he was regarded as a nervous child; but the association of chorea with rheumatism is too close a one for us to regard it here as a mere coincidence. You can generally trace, in a case of chorea, a strong rheumatic element, either inherited or acquired. In this form, before the patient has left his bed or his attack of rheumatism is clearly over, the chorea is manifested: which makes the connection still closer. Now, it has been thought that there is an embolic process at work in the smaller blood-vessels of the motor centres in the brain and spinal cord; small vegetations which are formed upon the valves are washed into the arteries supplying the motor tracts, especially the corpora striata, and the subsequent disturbances of nutrition give rise to the irregular, uncoordinated muscular movements. This is a plausible and ingenious theory; yet it is hardly sufficient to account for all the features of the disease. There must be some want of stability of the motor centres, independent of the coarse lesions resulting from embolism, the evidence of the existence of which, moreover, is not complete, and which is certainly not constant.

In the case reported there was no voluntary control over the muscles, and at the same time the mind seemed to suffer: he was almost an idiot. When admitted, his temperature was $98\frac{1}{4}°$: therefore the attack of rheumatism was over, and these symptoms were not due to a fresh outburst of the rheumatic affection. The want of power in these muscles must also be taken into consideration, as showing a close relation between chorea and paralysis.

Now, coming to the question of treatment, the influence of the hyoscyamine, which was suggested by analogy from the treatment of tremor, was here strikingly manifest. The dose was increased from $\frac{1}{200}$ to $\frac{1}{100}$ grain without any bad effects; but when he was taking this quantity he complained of some dryness of the throat, although it never was so severe as to require us to reduce the dose again. It was finally discontinued two days ago. Now he is perfectly steady and can control his movements; his tongue is clean and he has a good color; he is gaining flesh: indeed, he may be considered as well.

Did the hyoscyamine produce the striking effect, or did the rest in the hospital do it? That rest is good in all and can cure many cases of chorea, is admitted; but the improvement here was too sudden—coming on in three or four days—and too great to be attributed entirely to the good nursing and the food which he received since he was admitted. It is claimed that hyoscyamine is a valuable antispasmodic and exercises a remarkable control over muscular movements; also that with the control of the movements the condition of the muscles is improved and all the functions increased. Even the blood has improved; for, though he is still anæmic, he is not so much so as he was. Within a week after beginning the treatment he was out of bed and walking around, but not so well as at present.

What shall be given further? Will not the condition remain? Not necessarily; for all

the irregular muscular movements have ceased. He can take, however, for his anæmia, the elixir of the pyrophosphate of iron, a drachm three times a day, and stop the hyoscyamine as having accomplished its purpose.

ON FERMENTS IN THE URINE.

In the *Archiv für die gesammte Physiologie* (vol. xxx. No. 8, p. 35) we find a publication of Dr. Gehrig, which informs us of the results of his numerous experimental observations on the constituents of urine.

We abstract the following conclusions:

1. Normal human urine contains nearly always pepsine, trypsine, and a diastatic ferment in varying proportions.

2. The influence of ingested food on the relative and absolute quantities of excreted ferments is shown by diminution of pepsine and trypsine, and an increase of the diastatic ferment. The former reach a minimum in three to four hours after a meal, the latter a maximum.

3. In the normal urine of dogs all three ferments are found in appreciable quantities, the diastatic ferment, though, in the smallest proportion.

4. The relative and absolute quantities of all three ferments show a minimum several hours after feeding.

5. The normal urine of rabbits shows, after ample nutrition, always small quantities of trypsine and diastatic ferment, but only traces of pepsine.

6. After fasting for not too long a period the urine of men, rabbits, and dogs shows all three ferments in ample relative and absolute proportions.

MASSAGE IN THE TREATMENT OF INFANTILE PARALYSIS.

The advantages of this method of treatment lately formed part of a lecture by Dr. Murrell (*Med. Press and Circular*, December 23, 1885) on the above disease, and as it includes some important modifications in the ordinary manner of conducting the operation, it may be worth while to draw attention to it. After treatment during the acute stage by means of aconite, followed later on by physostigma and phosphorus, recourse is advised to a carefully graduated system of massage, commencing with simple *effleurage*, or surface rubbing, followed by the friction, which is a more energetic application. As the case proceeds, kneading of the affected limbs or muscles is resorted to, and this is succeeded by or combined with systematic *tapotement*, which is a form of percussion. This plan of treatment, conscientiously carried out, has, when the case has not been too long delayed, been followed by excellent results, but it should only be done by the advice and under the care of the medical attendant, as indiscriminate massage is likely to be futile, and may be injurious. The operation should be conducted with dry hands on a dry skin, and all oily or other inunctions studiously avoided.

INOCULATION OF TUBERCULAR MATTER IN ANIMALS.

Dr. Colin, of Alfort, has been engaged a number of years in experiments of inoculating animals with tubercular matter. In a note communicated to the *Gazette Hebdomadaire* of January 1, 1886, he states that the entrance of the tubercular matter into the absorbent apparatus determines both the ensuing lymphatic affection and the subsequent visceral implication. The former is not generalized, but always limited to the portion of the body in which the matter was originally introduced. The circulatory channel was in every instance found to be the way of the progressive tuberculization of the animal.

VIOLINIST'S CRAMP TREATED SUCCESSFULLY BY ELECTRICITY.

Dr. Adolphe Wahltuch, Honorary Physician to the Hulme Dispensary, Manchester, reports in the *British Med. Journal* for January 2, 1886, the case of a young woman, aged 19, who consulted him in July, 1885. She had been learning to play on the violin since she was 12 years old; and during the last twelve months, whilst practising a short time, she felt obliged to stop on account of a painful cramp in the upper left arm and right wrist. On examination he noticed that she could not raise her left arm as high as she did the right one. In getting the violin in the proper position, the cramp and pain manifested themselves in the left deltoid, biceps, and pectoralis muscles; the right hand holding the bow soon felt unable to do so, owing to a weakness in the wrist. In every other respect she enjoyed very good health. The treatment consisted in applying, three times a week, a continuous current of galvanism to each of the affected muscles, separately, for five to ten minutes at a time, using from five to fifteen Leclanché cells. To the right wrist he at

first used the faradic, and, later on, the continuous current. In all, nine applications were made within three weeks, when all unpleasant symptoms ceased. She was seen three months later, when she stated that she could practise then for several hours daily without experiencing any inconvenience whatever.

In looking up medical literature, Dr. Wahltuch was unable to meet with any record of cases of "violinist's cramp." This affection, though rare, yet belongs to a group of spasmodic diseases, among which the most familiar is that of "writer's cramp." Benedikt mentions a case of "knitter's cramp," and "tailor's cramp;" Watteville, "telegrapher's cramp;" Dupuytren, "coachman's cramp;" Henoch, "nailsmith's cramp;" Basedow, "milkmaid's cramp;" Clemens, "shoemaker's cramp;" Kunze, "typesetter's cramp;" and various authors, "pianist's," "painter's," "seamstresses," and "writer's cramps." No doubt, violinist's cramp is an analogous condition, having the same general characteristic,—namely, the recurrence of spasm or pain in a special group of muscles, when called upon to execute a series of combined special movements. It is a disturbance of co-ordination, caused by overexertion. The treatment generally consists in allowing temporary rest to the muscles implicated, and also rational and harmonious local gymnastics. But the most effectual results are obtained by the use of electricity. In the case mentioned above, violin practice was not stopped altogether during the treatment; the patient was allowed to practise for a very short time every day, and advised to play tennis, to write, to paint, and generally to use her hands in a variety of occupations.

ON SCANTY NITROGENOUS DIET IN DIABETES.

In a note of BOUCHERON appearing in the *Comptes Rendus* of December 14, 1885, we find some valuable dietetic hints for diabetic patients.

Boucheron refers to the fact that numerous diabetic subjects have also a gouty diathesis, and habitually indulge in food rich in albuminoids and in fermented beverages. The experiments of numerous observers prove that an exclusive albuminoid regimen leads to glycosury in the liver, and to a diffused glycosury in the entire organism. In dogs fed for some months exclusively on meat, glycogen is elaborated at expense of the ingested albuminoids. Albumen hence produces sugar just as well as the hydrocarbons, only the latter fact is better known.

In diabetes mellitus the sugar produced by albuminoids is equally, if not more, deserving of our consideration than the sugar derived from the hydrocarbons. Albuminous diet consequently increases the sugar-production in diabetic patients, and is to be cut short as much as possible, not only with the view to reduce and avoid glycosury, but also to diminish the nitrogenous products (urea, uric acid, and ptomaines). Abstinence of hydrocarbons alone will consequently not be the only indication in diabetes.

THE EXPLORATION OF THE UTERINE CAVITY IN CASES OF METRORRHAGIA.

At the meeting of the British Gynæcological Society, held on December 9, 1885 (*British Med. Journal*, January 16, 1886), DR. EDIS read a paper on this subject. The author desired to draw attention to the urgent necessity of this proceeding when dealing with cases of severe persistent or recurrent uterine hemorrhage. The subject was one of great interest, and often one of great anxiety to the practitioner. There was a tendency to treat metrorrhagia as if it were a special disease, in place of regarding it merely as a symptom of many and various conditions. A correct diagnosis was the first and most important element of successful treatment, which otherwise was mere guess-work. Speaking generally, there was almost invariably some local cause when the hemorrhage was really severe. Cardiac, hepatic, or renal disease might be present as a complication, or independently, and should always be taken into consideration. Uterine hemorrhage might be aggravated by the injudicious use of alcoholic stimulants; more especially was this the case about the time of the menopause. The author had repeatedly witnessed cases where the mere abstention from alcohol had been sufficient to arrest a profuse hemorrhage, which had been going on for months, and threatened even the patient's life. In attempting to form a rational diagnosis, it was of great importance to get a careful and exact history of the details of the case. Before proceeding to local investigation, the heart, lungs, liver, and other organs should be carefully examined, and inquiry made into the habits of the patient. A careful pelvic exploration should follow. Then if, after consideration of all the facts of the case, the

presumptions were, everything else being excluded, that there was some intra-uterine complication, the practitioner was not justified in allowing the patient to go on bleeding indefinitely without giving her the benefit of further assistance. The author, in general, effected dilatation by dividing the cervix with the metrotome or scissors, either alone, or in conjunction with the employment of tents or other dilators. It was advisable, after operation, to irrigate with some appropriate antiseptic lotion, morning and evening, for a few days. In cases of persistent hemorrhage, due to retention of the placenta, following a miscarriage, the cervix generally remained sufficiently patulous, or was so readily dilatable, that no difficulty was experienced. Where, however, only a small portion of the placenta had been retained, and the case allowed to go on for several successive weeks or even months, the cervix might be found so contracted as to necessitate the introduction of laminaria-tents overnight. In such cases, incision should never be resorted to, this method being reserved exclusively for cases of small fibroid or fibroid polypi in the interior of the uterus. The author related several interesting cases to exemplify his meaning, and to show that, until the cavity of the uterus had been explored, a correct opinion could not be formed as to what method of treatment should be adopted. He would lay stress upon the importance of dilating the cervix and exploring the interior of the uterus in all cases where hemorrhage from the organ persisted unnaturally, and where the ordinary medicinal agents failed in affording relief, and there was no evidence of any condition external to the uterus sufficient to explain the persistence of hemorrhage.

Dr. Aveling had observed that, in cases requiring dilatation where something existed in the uterus capable of being removed, the cervical canal was either dilated or dilatable; this peculiarity had been noticed by Harvey. In these cases, he preferred to use his own dilators. Where the os was rigid and contracted, a more gradual method was better.

Dr. Routh believed that Dr. Edis's paper was eminently practical, but he took exception to one or two points. As to rapid dilatation of the uterus, it did not always succeed when the uterus was rigid; and after all it was not a rapid, but a long and tedious process, requiring an anæsthetic. He preferred the sea-tangle-tents used with proper precautions, and always collected and prepared his own. In regard to those cases of metrorrhagia in which nothing could be found after exploration, it should be remembered that an ulcerated or excoriated condition of the mucous membrane need not be restricted to the os or external portion of the cervix, but might extend up the uterine cavity. It was quite in keeping to suppose that a congested state of the liver would have the same effect on the uterine mucous membrane as was the case in piles, causing them to bleed and enlarge. The last objection he could take was to the incision of the cervix. The danger to the patient from septic poisoning was greatly increased by such a measure.

Dr. Barnes thought no law in therapeutics more clear than that which dictated direct examination of an organ at fault if it could be effected. The endeavor to do so was made, in the case of other organs, by percussion and auscultation. The uterus offered the incontestable advantage of being directly accessible. A narrow condition of the os externum was a frequent factor in cases of hemorrhage. Great benefit was often derived from simply enlarging this opening by a strictly limited incision. The immediate effect was to relieve local engorgement. It also afforded a ready escape for imprisoned blood-clots and mucus, and gave free access for exploration and the application of topical remedies. It was also useful in many cases of intra-uterine polypus and fibro-myoma of the body of the uterus.

Dr. Thomas Savage found Hegar's dilators to be very unsatisfactory. Laminaria-tents were much more efficient, but were sometimes followed by disastrous consequences. In several cases in which he had suspected a portion of the ovum to be left behind, he had thoroughly swabbed out the uterine cavity with pure carbolic acid, and found that such a course would often prove sufficient for cure.

Dr. Bantock was compelled to dissent from Dr. Edis on one or two minor matters. He did not approve of incising the internal os after partial dilatation for the purpose of removing a small fibroid tumor, because it would be impossible to control the subsequent extension of the laceration of the divided tissues consequent on the forcible extraction of such a hard body as a fibroid tumor. He had met with cases exactly corresponding to those narrated by Dr. Edis, and it was quite easy for him to support his views. He thought it was a mistake to mix glycerin with iodine or carbolic acid when the full effects of either remedy were desired, for in both instances the caustic effect was in this way reduced to a

minimum, if not wholly removed. Especially was this the case with carbolic acid. He was not prepared to assent to the doctrine that a cervix which was the subject of even extensive disease of a non-malignant character, but the result of chronic catarrh, etc., should not be subjected to dilatation. These were just the cases in which he obtained the most satisfactory results from dilatation and the subsequent daily introduction of a strip of lint saturated with glycerin for ten to fourteen days.

MR. LAWSON TAIT considered the use of sponge-tents to be, of all the methods of dilatation, the most dangerous, and had long since given them up. Hegar's dilators he considered extremely risky, and their employment was as exhausting for the operator as for the patient.

COCAINE IN LARYNX, PHARYNX, AND NOSE.

DR. DESSAR epitomizes his experience with cocaine in the larynx, pharynx, and nose in the following aphorisms (*Deutsche Medizinal Zeitung*, January 7, 1886):

1. Cocaine reduces the sensibility of those parts, even in existence of hyperæsthesia, to such an extent that the laryngoscope and rhinoscope can be employed with ease.

2. Reduction of pain, especially in operations.

3. Removal of pain and difficulty in swallowing in presence of a stenosis depending upon tumors in phthisis, syphilis, perichondritis, and tonsillitis.

4. Ischæmia in case of strongly injected mucous membranes.

5. Diminution of profuse hemorrhages.

6. Insurance of diagnosis in reflex neuroses of the nose. For purposes of examination a five per cent. solution is sufficient; for those of cauterization of the pharynx, nose, and for the removal of deglutition-difficulties, a ten per cent. solution, and for laryngeal operations a twenty per cent. solution, are required.

THE EFFECTS OF A HEAVY DOSE OF SALICYLATE OF SODIUM.

We have a number of times referred to the untoward effects produced by salicylate of sodium when given in large doses, and DR. JULIAN J. CHISHOLM, in the *Maryland Med. Journ.*, January 30, 1886, is able to confirm the experience of others in this respect. He states that he has been employing the salicylate of sodium for the treatment and relief of painful attacks of neuritis, whether specific or rheumatic in nature, and he has found that it will subdue pain and remove congestions of the eye-tissues more rapidly than any other remedy he has tried. In a dose of from 25 to 30 grains, given every four hours, the beneficial effects are often magical. Patients who could not sleep on account of pain in the eye, notwithstanding leeching and the local use of atropine and the administration of iodide of potassium and mercury with opium, have obtained complete relief before a half-dozen doses of sodium powders have been taken. The eye-pain and eye-congestions vanish, and convalescence seems to be very well established after a few doses of the salicylate. When, however, the remedy is pushed for any length of time, it sometimes produces headache very similar to that produced by quinine, possibly even in a more severe degree. Recently, however, through the mistake of a druggist for reading 4 drachms as 4 ounces, a patient received in one powder 192 grains of the salt instead of 24 grains which were ordered. Very shortly after taking the first powder his head felt full and his ears commenced to buzz. He became weak, was nauseated, and had to go to bed. At six o'clock, four hours after taking the dose, diarrhœa set in, and one hour later he vomited. The night was passed in such miserable wretchedness that a second powder was not administered. The next day the brother of the patient came to explain to Dr. Chisholm the effects which the powder had produced, and brought him one of them for examination. He reported the patient now relieved of nausea and diarrhœa, but too weak to get out of bed. The eye no longer gave him pain. He did not know at what time relief came, as his other more pressing annoyances were all-absorbing. He got out and to my office in three days after the dose was taken. All pain and injection of the eye had disappeared. The cloudy vision had nearly gone, and no further eye treatment seemed necessary. The case is instructive in many ways, and offers comfort to many practitioners who prescribe ℈i doses of the salicylate of sodium with hesitation, fearing bad effects from what they believe to be so large a dose. This dose of 192 grains, dissolved in a half-tumbler of water, had caused diarrhœa before vomiting, which did not take place until five hours after the medicine had been administered. We might, therefore, fairly believe that after five hours not much of the drug remained in the stomach to be ejected, and that

the effects produced represent the degree of depression which so large a dose can occasion. The symptoms could not have been alarming, as it was not thought necessary to call for advice till the next day, when only a general debility remained.

ON SUGAR IN THE URINE AFTER FEEDING WITH CANE-SUGAR.

SEEGEN publishes in *Pflüger's Archiv* (xxxvii. p. 342) the following results of his experiments on dogs. Being fed with cane-sugar, the animals excreted all sugar with the urine as represented by the following table:

SUGAR.

	Ingested. Grammes.	Excreted. Grammes.	Per cent.
Dog I.	520	15.2	3.0
" II.	560	22.0	4.0
" III.	480	7.0	1.9

THE TREATMENT OF PROFUSE HÆMOPTYSIS.

In discussing the treatment of hæmoptysis, of course only the cases in which the hemorrhage is profuse need to be considered, for slight hæmoptysis requires no definite treatment. In the treatment of the serious form the general methods employed must be the same as that for profuse hemorrhage from other parts of the body; and although containing no new points, the paper recently read by DR. SAMUEL WEST before the Medical Society of London (*Brit. Med. Journ.*, January 16, 1886) contains the most successful methods, brought together in such a succinct way that it is worthy of being laid before our readers. Dr. West shows that rest, absolute of the body as a whole and of the diseased part so far as possible, is the main essential principle; and with this object in view the patient should be kept in a recumbent position, speaking prohibited, cough checked, and excitement avoided, or, if present, controlled by drugs. These indications are best met by the use of opium, which Dr. West regards as indispensable in most cases of hæmoptysis. Of the so-called hæmostatic remedies two groups may be formed,—the topical astringents and the vascular constringents. Chief among the former are the perchloride of iron, alum, gallic and tannic acids, and acetate of lead; but, powerfully as these remedies act when applied to the bleeding surface, it is difficult to see how they can produce the same local effect when administered by the mouth, for it is hard to comprehend how a few minims of dilute solution introduced into the stomach can produce an effect which the undiluted solution can effect only when applied directly to the bleeding surface; consequently, if they act at all, it must be by producing vascular constriction. Of the groups of remedies which produce vascular contraction, digitalis and ergot are the most prominent examples. Both of these drugs produce contraction of the peripheral arteries, and if hæmoptysis were due to capillary oozing they might possibly arrest the hemorrhage; but we know that hæmoptysis is not due to capillary oozing, but to lesions of fairly large vessels. Hence these remedies, instead of being useful, may be even dangerous, and increase the hemorrhage. Hæmoptysis always tends to stop itself, from the fact that the blood-pressure is reduced from the loss of blood, and the greater the reduction the greater is the tendency to form a clot. This fact has long been recognized, and therefore one of the early standard methods of treatment of hæmoptysis was to produce hemorrhage from other parts by free blood-letting; and although blood-letting is now believed to be indicated in but very few cases, an attempt may be made to reach this end, not by removing the blood from the body, but by detaining it in some part of the body distant from the seat of the hemorrhage. This may be, to a certain extent, accomplished by extensive dry cupping, or by dilating some of the vast vascular systems of the body, and making them act as temporary reservoirs for the blood. This might possibly be accomplished by producing purgation, or the cutaneous system might possibly be dilated through pilocarpine, or even nitrite of amyl; however, the possible objection to the use of these drugs is they dilate the vessels of the lungs as well. Then, again, the blood-pressure may be influenced through the heart, as by use of cardiac depressants, of which antimony is the most reliable; while, lastly, diet is of the very greatest importance. The principle of absolute rest and restricted diet should be applied in all cases of hemorrhage. It is thus seen that without giving a long list of drugs, or discussing in detail the various methods of treatment of hæmoptysis, Dr. West indicates the conditions which have to be fulfilled and the essential principles which should guide our choice of remedies. Our treatment of hæmoptysis is as yet extremely unsatisfactory, and perhaps the following out of some of the lines of treatment suggested above may lead to valuable results.

EXPERIMENTS WITH NUMEROUS DRUGS ON THE BACILLUS TUBERCULOSIS.

If Koch's bacillus tuberculosis is actually the cause or infectious agent of tuberculosis, the labors of SORMANI and BOGNATELLI to ascertain the effect of various drugs on the microbe are in the right direction to possibly advance the therapeutic aspects of this affection. We abstract from their papers, "Ricerche Sperimentali sui Neutralizzanti del Bacillo Tubercularea Scopo Profilatico" and "Ulteriori Ricerche sui Neutr. del Bac. Tuberc.," Milano, 1885, simply their general conclusions.

Both authors tested a number of chemicals, especially such which could be therapeutically considered as to their influence upon the vitality of bacillus tuberculosis. One c.c. (16 gtt.) of sputum, in which the presence of a large number of bacilli was previously ascertained, was, under the ordinary precautions, mixed with a certain quantity of the drug to be tested, the mixture preserved at a temperature of 35° to 40° (C.) one to two hours, then mixed again, and by means of a disinfected syringe injected in the abdominal cavity of guinea-pigs. These animals, unless they died sooner, were killed after two to three months and examined for bacilli. A large number of drugs showed no or a very slight pertinent action. An appreciable antibacillar effect was obtained from the following drugs in an ascending order: lactic acid, camphor, bromide of ethyl, naphthol, turpentine, chloride of palladium, creasote, carbolic acid, and corrosive sublimate. The following drugs showed likewise some antibacillar virtues: benzine, toluol, oil of caraway, essence of cloves, guajak, chinolin, menthol, and creasote.

ACUTE PROSTATITIS WITH DISCHARGE OF HYALINE CASTS.

At a meeting of the Clinical Society of London, held January 8, 1886, SIR ANDREW CLARK read an account of a case of acute prostatitis which was accompanied by a discharge of hyaline cylinders resembling renal tube-casts (*Medical Press*, January 13, 1886). A medical man in average health was suddenly seized with pains in the limbs and loins, there was frequent desire to pass urine, and scalding when it passed, with pain at the anterior extremity of the urethra. The urine rapidly became bloody, accompanied by much dysuria and tenesmus. No evidence of disease other than that in connection with the urinary organs could be discovered. The urine, examined by the naked eye immediately after its discharge, exhibited numerous minute thread-like fragments. Under the microscope they were seen to consist of hyaline cylinders, in several instances covered by patches of leucocytes. On standing, the urine deposited a mixed sediment in a thin even layer. The specific gravity of the urine was 1022, its reaction acid, and it was slightly albuminous. The sediment contained uric acid crystals, oxalate of lime, blood-disks, patches of epithelium from the bladder, leucocytes, flask-shaped hyaline bodies, and hyaline cylinders. The crystalline constituents appeared to have been formed in the urine subsequent to its discharge. On examination per rectum, the prostate was found much enlarged, and very tender to the touch. The patient was soon after seen by Sir James Paget, and the symptoms of the local disorder had become aggravated. By degrees, the uric acid, oxalate of lime, and larger hyaline casts disappeared from the urine. A small quantity of albumen, however, remained, and on standing, the sediment showed much mucus and small hyaline cylinders with flask-shaped hyaline bodies. After eight days' illness, at the close of micturition there was discharged a pultaceous mass of mixed mucus and phosphates, and this discharge continued for nearly a fortnight in steadily diminishing quantities. The patient entirely recovered after being ill a little more than a month. During the last six years the only symptoms that have arisen have been such as he himself ascribes to imperfectly developed gout. The important point in these cases is the discharge through the urine of hyaline moulds of the vesicles, and smaller ducts of the prostate. Before finding the connection between the cylinders and the flask-shaped bodies, Dr. Clark was inclined to think the latter originated in the kidney, but further study of the case, and two others similar to it, and examination of the prostate after death, have convinced him of their prostatic origin. These cases with prostate casts in the urine may be only curiosities of medical experience, but since in none of the standard works on urinary affections, in no monographs dealing with diseases of the prostate can any reference be found to the discharge of hyaline cylinders in prostatitis, and without careful examination they might very easily be mistaken for cylinders originating in the kidney, the case is certainly of sufficient importance to bring it before the notice of the profession.

MR. BRYANT said it was pleasing to see a physician taking an interest in a case which

we usually considered as belonging rather to surgical diseases. We could recognize by the eye these bodies in prostatitis, but there was no microscopical evidence that they were casts of the prostatic ducts themselves. He would like to ask Sir Andrew Clark in what way we could be saved from the fallacy of mistaking these casts for renal casts.

DR. GREENFIELD, of Edinburgh, said it was his misfortune to have arrived too late to hear the whole of Sir Andrew Clark's paper, and he felt he must apologize for venturing to speak on the subject, but he thought he could raise some parallel cases. He had seen lately four cases with concretions exactly like those found in prostatitis, concretions which resembled corpora amylacea. The cases consisted of two girls, a young woman, and a boy æt. 7. In the boy these bodies appeared in the urine intermittently. In the females, they also appeared from time to time. In one case he had found after death a large number of these bodies in the kidney. They varied much in character; some were small and hyaline with fine lamination, some gave a deep stain with carmine, some with magenta, and some with iodine. The subject was a comparatively new one to him. He had not come across these cases often. He merely brought these cases forward as presenting a condition worthy of being considered side by side with prostatic concretions in the urine. He had found these bodies recently in two cases of cancer. He thought they might occur widely in many pathological conditions.

DR. GLOVER asked whether the patient had a well-defined attack of gout?

SIR ANDREW CLARK in reply said no, but the patient considered himself gouty. He presented symptoms of a varying kind which he (Sir Andrew Clark) thought could only be assigned to the circulation of acid in the blood. The question which his paper suggested was by what means can we distinguish hyaline casts or cylinders as coming from the prostate gland or from the kidney. He thought the case upon the first examination to be one of acute nephritis. The cylinders looked exactly like those occurring in acute renal congestion, but upon a second investigation he found some little flask-like bodies attached to the hyaline cylinders. The prostate was troubled. The urine was healthy, plus a little albumen. He felt it was more a case of prostatic disease. He had not published the case at the time (some years ago), as he was anxious to discover if any other symptoms showed themselves. Nothing had, however, arisen. In other cases he had seen symptoms of a similar character. To Mr. Bryant's question his answer was, you could not discover the nature of the cylinders from their aspect, you could not even be sure if the prostate was their seat of origin unless you found these hyaline moulds associated with the hyaline cylinders. In women's urine he had always found numerous starch-like bodies. Whether it be that they use violet powder or some such substance, but somehow or other the starch-like bodies were always there.

THE ELIMINATION OF BISMUTH.

M. HANS MEYER has poisoned mammals and birds by injecting under the skin or into a vein large quantities of the salts of bismuth. At the necropsy the large intestine and its surroundings were seen to be of an intense black color; often there existed also large tracts of necrosis of the mucous membrane of the large intestine, whilst the stomach and small intestine preserved their normal appearances. Chemical analysis of the wall of the intestine and of the contents has demonstrated that the digestive tube all along serves as an excretory surface for bismuth, but that this elimination takes place much more actively at the surface of the large intestine, and that the metal is excreted in the form of a sulphide. By previously making the animals ingest preparations of sulphur, the elimination of bismuth was augmented in the stomach and small intestine, and the wall of the stomach became pigmented of a deep black color. The author concludes from these facts that the presence of sulphuretted hydrogen favors the elimination of the bismuth by precipitating the metal from the capillary circulation of the intestine in the form of the insoluble sulphide, which plays the part of a foreign body. If this precipitation does not take place, the metal re-enters the circulation, and is eliminated largely by the kidneys. As the necrotic tracts and ulcerations are met with almost exclusively in those portions of the digestive tract where the pigmentation obtains its greatest intensity, the conclusion is naturally arrived at that the precipitation of the bismuth in the thickness of the intestinal mucous membrane has caused the necrosis and ulceration by the precipitate blocking the capillaries and vessels of the parts concerned. Further, if the animals are made to ingest simultaneously salts of bismuth and substances that disengage sulphuretted hydrogen, neither necrosis, ulceration, nor pig-

mentation of the intestine occur, evidently because the bismuth and sulphuretted hydrogen in combining mutually neutralize each other. According to Hans Meyer, also, it is probable that in mercurial poisoning the inflammation and necrosis of the gastro-intestinal mucous membrane depend, in a similar manner, on putrid fermentations which disengage sulphuretted hydrogen. It is well known that the prevention of mercurial stomatitis by the use of dentifrices and antiseptic lotions is due to their property of preventing the processes on which the development of sulphuretted hydrogen is dependent.—*London Lancet*, January 2, 1886.

THE USES AND DANGERS OF THE OIL OF SASSAFRAS.

In the *Virginia Med. Monthly* for January, 1886, Dr. Thomas J. Miller publishes an article on the oil of sassafras, which he recommends highly in the treatment of neuralgia. His method is to saturate a piece of flannel with the oil of sassafras, and rub the affected part briskly until the skin is reddened by the friction, and to take a teaspoonful in several tablespoonfuls of water. It also appears to possess decidedly intoxicating effects.

In this connection a paper read before the Chicago Gynæcological Society by Dr. John Bartlett (*Chicago Med. Journ. and Exam.*, December, 1885) is of interest. He quotes a number of authorities to show that sassafras is not the innocent agent that it is supposed to be, but that in reality it has violent toxic properties. This statement is based largely upon a paper of Dr. Charles L. Hill, which we have already referred to in the August number of the Gazette, p. 554. Dr. Bartlett further shows that, in addition to its general toxic properties, it seems to have decided power in producing abortion, and he refers to two cases in which this result followed the internal use of sassafras in the form of a tea. According to Dr. Bartlett, sassafras is a narcotic and sudorific; it has the power of inducing tetanic and clonic spasms, followed by paralysis, and produces uterine contractions.

ON A NEW FORM OF CITRINE OINTMENT.

On referring to the new edition of the British Pharmacopœia, just published, it will be seen that the unguentum hydrargyri nitratis dilutum is ordered to be prepared with paraffinum molle, soft paraffin, the synonymes being petrolatum (its designation in the Pharmacopœia of the United States), petroleine, and unguentum paraffini. It is described as a semi-solid mixture, containing some of the softer or more fluid members of the paraffin series of hydrocarbons, usually obtained by purifying the least volatile portions of petroleum.

These characters do not, however, give us any standard of purity; and, beyond describing the melting-point, we are left in ignorance as to what form of petroleum-jelly we should employ. The material purpose suggested by this innovation in the preparation of this particular ointment is clearly to obviate the destructive effects of decomposition, with its resulting rancidity, which obtained to a very objectionable extent in the old form of the dilute citrine ointment.

This hitherto has been prepared with lard, and sometimes even with an animal oil, such as neat's-foot or trotter oil; sometimes with fish oil, such as cod-liver oil,—the latter serving to keep the ointment better and longer than the former, and being considered by some as more efficacious as a remedial agent. It has also been prepared with fresh butter; this also keeping fairly well.

As soon, however, as the Americans discovered the petroleum-jelly, and it was introduced into Great Britain, it was hoped that it would supersede all these articles in the preparation and dilution of citrine ointment in particular; but utter disappointment was the inevitable result of the trial and the experiment, as rapid oxidation, decomposition, and rancidity set in, just as in the old form prepared with lard, etc.

The cause of this decomposition Mr. Blennerhassett Atthill (*Brit. Med. Journ.*, Jan. 23, 1886) believes to be dependent upon the manufacture of petroleum-jelly through some acid process and by the addition of possibly some resinous matter or honey with the pretence of giving emolliency and consistency. Mr. Atthill believes the petroleum product which is known under the name of "geoline" to be the best vehicle in the preparation of citrine and oxide of zinc ointment. He states that he has found it to be in every way a perfectly efficacious and stable medium in all ointments, and especially in preserving the citrine form. It blends admirably with nitrate of mercury ointment, and it makes a stable oxide ointment, which keeps for an indefinite length of time. The dilute citrine ointment made with geoline keeps absolutely pure. It is of a firm consistency, pleasant in

its use, having a nice jelly-like appearance, and about 75 per cent. is saved over lard.

The melting-point at which geoline liquefies is stated to be 105° F., so that its consistency in ordinary use is its great advantage over other fluid preparations.

TREATMENT OF SPONDYLITIS WITH THE PLASTER-OF-PARIS JACKET.

PETERSON obtained very satisfactory results with the plaster-of-Paris jacket in spondylitis; as published in the *Archiv für Klinische Chirurgie* (xxxii. p. 182), of twenty-six cases of spondylitis treated with the plaster jacket and Barwell's sling, eighteen were cured, four remained under treatment, two died, one was not cured, and one had an unknown issue. The duration of the treatment was from three months to three years, and the number of jackets needed was on an average six. In most instances the patients felt contented with a comparative slight improvement in their condition.

ALBUMINATE OF CORROSIVE SUBLIMATE AS A SURGICAL DRESSING.

Attention has been directed to this powerful germicide by a most interesting article on the value of an albuminate of corrosive sublimate by Prof. Sir Joseph Lister in the number of the *Lancet* for October 25, 1884. In it the professor, after numerous experiments, recommends a one per cent. solution as the one combining the two advantages of being efficacious and unirritating to the tissues. Writing from London, and having in view the large requirements of a general hospital, he recommends the using of the serum from horse's blood as the menstruum for the corrosive sublimate. The wants of the general practitioner would necessarily be different: namely, what he would require would be some ordinary vehicle that any chemist could procure without difficulty, and of whose purity there could be but little doubt. It occurred to MR. W. L. CLELAND (*Australasian Medical Gazette*, December, 1885) that the simplest and most commonplace article would be the albumen ovi of the pharmacopœia. As a rule an ordinary egg will furnish one ounce of albumen in the form of white of egg; and one ounce of the albuminate would, in ordinary circumstances, be ample to prescribe at one time for any ordinary surgical case. Since that time he has put the idea into practice, and has been so pleased with the result that he has thought it worth while to draw special attention to Prof. Lister's important discovery. Ordinarily the sample is of a creamy consistence. This, of course, would render it unsuitable for injecting into cavities, and therefore his experience of it is limited to its application to superficial wounds and ulcerations of the surface. The method of using it that he has found most convenient is to paint the surface of the wound or ulcer with the albuminate, place a piece of protective over, and then a pad of some antiseptic wool to catch and absorb any discharge. Dressed in this manner it will be unnecessary to disturb the parts for a period varying from three or four days to a week or ten days. Mr. Cleland publishes notes of three or four illustrative cases:

(1) J. B., æt. 50, contused and lacerated wound, three inches by two inches, of the back of the hand, inflicted by a pick, exposing the extensor tendon of the middle finger, and abrading it. Dressed at first every third day, and then weekly, and subsequently fortnightly. Completely healed without any bad symptoms.

(2) H. W., æt. 45, malignant ulceration of mamma, sinus leading to sacrum and another in connection with the femur. Syphilitic history suspected. Discharge from all the ulcerated surfaces extremely offensive. At first the wounds and cavities were syringed twice daily with carbolic lotion (one in forty), and dressed with carbolic oil and salicylic wool. The odor of the ulcerations was very offensive to the patient himself and to his fellows. The albuminate was tried, in conjunction with the carbolic syringing, at first daily and subsequently every third day. The offensiveness disappeared and the ulcerations even assumed a more quiescent appearance, becoming dried up or mummified to a great extent. The patient subsequently left the asylum.

(3) C. H., æt. 55, chronic ulcers of leg and dorsum of foot, edges indurated, surfaces unhealthy looking. The application of the albuminate speedily removed all unpleasant odor, and the ulcers took on a healing action and progressed to a favorable termination. This case was the more striking as the patient was emaciated to a degree, although she consumed large quantities of food with avidity.

(4) A. S., æt. 50, in the last stage of emaciation; the extremities constantly cold and blue; paralysis of the vaso-motor nerves controlling the capillaries of the face, causing a deep carmine injection of the skin. A slough of the size of half a crown occurred spontaneously on one buttock. The albuminate was applied; the slough did not extend, but sepa-

rated in two days, and the wound was healed within a fortnight. The patient died shortly after. This slough, if not treated, would in all probability have rapidly extended in the usual way and have been a great source of annoyance to every one connected with the case.

The advantages of the dressing are:

(1) Infrequency of dressing in common with all powerful germicides.

(2) Simplicity.

(3) Powerful deodorizing qualities.

(4) Absence of all irritating properties.

(5) Small cicatrice that is left.

RECENT PROGRESS IN THE TREATMENT OF CHANCROID.

The multitude of remedies constantly suggested, advised, or urged in the treatment of chancroid is an indication of the degree to which this form of venereal sore can be at times rebellious. The most obstinate form of the chancroid is that designated as phagedenic, and the various modes that may be employed in its treatment have been reviewed at length in the *Journal of Cutaneous and Venereal Diseases* for February, 1886, by Dr. Charles W. Allen.

Recently Spillman, of Nancy, has treated several cases of this variety by first scraping thoroughly with the sharp spoon or curette, excising the undermined edges with scissors, cauterizing with the thermo-cautery, and dressing with diluted liquor of Van Swieten. Among the cases so treated was one of a medical student who had inoculated himself with the pus of a soft chancre on the anterior surface of the thigh. The thigh, lower part of the abdomen, and the scrotum became involved in an extensive phagedenic sore.

Various forms of treatment, from the use of iodoform to prolonged hot baths, were tried, with no effect.

The treatment by scraping, etc., was rapidly followed by a cure in this as in the other cases.

To abort soft chancres, Hebra advises as follows:

Thoroughly cleanse the sore, treat with a preparation of potash-soap and spirits, dry carefully, apply pure salicylic acid, and cover with a plaster.

This treatment succeeds best when the application is renewed on two succeeding days, and the sore suppurates freely. After three days, a white scab covers the sore.

An emollient ointment is now to be spread on lint, and applied. Under this the scab speedily separates, and the wound heals without any bubo formation.

Iodoform is one of the most valuable applications in the slowly destructive forms of chancroid. Its use, however, in private practice is almost impossible, unless in some way the odor be destroyed or disguised.

Men object to it from reason of its *give-away* perfume, and public women will not submit to its application, as it keeps the men away from the house.

Only in the *virtuous*, therefore, can it be used pure without opposition. Iodoform has now so wide a range of application outside of venereal diseases that it is to be hoped these prejudices will soon disappear. This may, perhaps, be accomplished by deodorizing the iodoform, various formulæ for which have been already published in the Gazette.

Dr. Allen has recently called attention to the beneficial action of pyrogallic acid in the treatment of chancroids. This was first recommended by Vidal, of Paris, whose good results led others, among whom were Terillon and Mauriac, to make extended trial of the drug. Vidal recommended a powder composed of one part of the acid and four of starch. Dr. Allen has used and recommended the application of the pure powder to be first applied and covered over with a layer of traumaticine, or a solution of pyrogallic acid in collodion.

Of all caustics, the hot iron or thermo-cautery is probably the best for the majority of cases. With it we produce just the amount of cauterization we desire.

It can be used where other caustics would be dangerous, as in the vagina.

The pain produced, though severe, is of much shorter duration than that from chloride of zinc or nitrate of silver.

Since the introduction of cocaine into venereal surgery, the Paquelin cautery has lost its terror for the patient. Bono (*Gaz. delle Cliniche*, ii., 1885) says, "In cauterization, cocaine showed every desirable analgesic property of a sufficiently long duration."

Latouche (*Rev. de Clinique Méd.-Chirurg.*, January, 1885) strongly favors the thermo-cautery at a dull red heat, especially for chancroids of the vagina and neck of the uterus. He gives a number of cases in which the cure was complete in from eight to thirty-three days.

Dr. Aubert, of Lyons, has recommended prolonged hot baths as a means of treating chancroid.

Martineau and Lormand have carried out

some experiments at the Lourcine Hospital in Paris, on the effect of baths at about 104° F. on chancroids and buboes.

They found that in all the cases the virulence quickly disappeared, and that auto-inoculation gave negative results after one or more baths in all cases excepting one, where the chancroid was within the urethra.

They approve of the treatment for severe cases, finding it quite practical, and that it hastens the cure in all cases.

Wet compresses should be put upon the patient's head while in the bath, and an attendant be present for fear of syncope. It is not necessary to submerge the whole body.

Sponge-Grafting.—Dr. Pokrovsky applies fine slices of the best Turkish sponge, washed in a three per cent. solution of carbolic acid, to chancroids and chancroidal buboes, and finds that this treatment brings about rapid cleansing and healing in about ten days. In syphilitic cases, the sponge-dressing gives rise to rapid healing only after the virus has been mitigated by specific treatment; otherwise the application of sponge-grafting causes disintegration of the tissue.

THE CURE OF SPASMODIC ASTHMA WITH ELECTRICITY.

Dr. E. Paget Thurstan reports in the *Brit. Med. Journ.*, January 16, 1886, the case of a man, aged 42, with a gouty history, who had been for a long time suffering from spasmodic asthma, for which he had consulted a number of physicians and had taken a large variety of patent medicines without relief. The attacks of dyspnœa commenced about 3 or 4 A.M., lasting till about 8 or 9 in the evening, and were very severe. There was a distinct cardiac impulse in the epigastrium; the area of cardiac dulness was increased, and extended lower and to the right of its normal position. The aortic sounds were not very loud, and were heard only to the right of the mid-sternal line. There was no murmur or reduplication of sounds. The pulsation of the carotids was very distinct. Ronchi were audible over the subclavian region on the right side, and very occasionally on the left, but resonance was normal. There was some enlargement of the liver and spleen. The bowels acted regularly, but he had a feeling of fulness and drowsiness after meals, and flatulence; latterly these had been better, as he had been omitting cabbage and green vegetables, cheese, pastry, etc., from his dietary, having discovered, by experience, that a supper including these was a certain prelude to a severe attack of dyspnœa. He had always been moderate in the matter of drinking.

On March 24, 1884, after using an interrupted current with a bichromate of potassium cell daily for a fortnight along the edge of the sterno-mastoids, from the level of the jaw to the sternum, he was free from dyspnœa; but the pulsation of the carotids in the neck continued, and rhonchi were still to be sometimes heard under the right clavicle. He had not been free from attacks for so long a while since November, 1883; he could now run uphill without distress.

EFFECT OF NITRITE OF AMYL ON THE BLOOD-PRESSURE.

The influence which inhalations of nitrite of amyl exert on the arterial pressure is usually thought to be a lowering of the same. The investigations and direct measurements of Dr. Schweinburg (*Centralbl. für Med. Wiss.*, January 2, 1886) with Basch's sphygmograph, however, brought out different results.

The blood-pressure was seen to rise after inhalation of the drug, at the time when the well-known symptoms, reddening of the face, sensation of warmth, pulsation of the carotid arteries, etc., set in. This apparent contradiction between the ordinary assumption and Schweinburg's researches this observer explains by the statement that nitrite of amyl given in large quantities, or in small but repeated doses, produces a reduction of the pressure, but after small quantities, such as are exhibited for therapeutic purposes, a transitory rise takes place. Hence care must be taken in cases in which a sudden rise of pressure would be dangerous.

LARGE CERVICAL SPINA BIFIDA UNDERGOING SPONTANEOUS CURE.

At the meeting of the Clinical Society of London, held January 8, 1886, Mr. Clutton read a note of a case of the above nature (*Medical Press*, January 13, 1886).

The patient was the younger brother of a case in which he had successfully treated a lumbar spina bifida by the glycero-iodine injection, and the particulars of which were reported to the Society in 1862. Both cases were shown as living specimens last November. The mother had had ten children, of which the ninth and tenth were affected as above mentioned. The latter was born in

1885 with a spina bifida in the cervical region of the spine, of which the size and position were demonstrated by means of a photograph. It was six and one-half inches in diameter, and rather coneiform in shape, with the apex directed upwards. The coverings were thin but completely covered with skin. It could be reduced in size by pressure, and filled again when the child cried. A considerable aperture could be felt in the vertebral arches. It was thought to be a simple running goitre from the fact that there was a perfect cutaneous covering without any ulceration, median furrow, or central depression, that it was translucent in every part of its surface, and that there were no paralytic symptoms. When five weeks old the cyst was found to be much smaller, and its coverings quite soft and flaccid. No treatment of any kind had been adopted, and yet the communication with the interior of the vertebral canal had become occluded. From that time till December it diminished in size, when the child died from causes unconnected with the spina bifida. Mr. Shattock showed the specimen which was obtained from the post-mortem examination.

Mr. Golding Bird said he should like to ask of what the child died, as it seemed to him the photography was as fatal as the operation.

Mr. R. D. Parker thought this was not a straightforward case of spina bifida. In the report of the committee last year appointed to investigate spina bifida there were cases of a precisely similar kind. Mr. Thomas Smith and Mr. Holmes had drawn similar conclusions to himself. He thought the attempt of spontaneous cure was not so successful as when injection had been adopted. Many recoveries had followed treatment, and he thought, therefore, that treatment was more favorable than spontaneous recovery.

A member asked what changes did the tumor undergo? It was said that at a certain period the tumor began to shrink. Were the changes due to healthy processes, or to inflammatory changes? He had assisted Mr. Holmes at an operation in a case similar to the one under discussion. The tumor was situated very high in the dorsal region. The child was a few weeks old. A ligature was placed round the tumor, which was removed. The state of the patient became very critical, and the child died in a few hours.

Mr. Clutton, in reply, said the child died from causes unconnected with the cyst,—from diphtheria or some intercurrent affection. Mr. Parker had said it was not a pure case of spina bifida, it might be a meningocele or myelocele, but these cases of spina bifida vary, some as meningocele sometimes contain the cord, and sometimes an expansion of the cord. Had the case survived he believed the tumor would have become quite small, and undergone spontaneous cure. It might have been laid open without endangering the life of the child. No difficulty presented itself in the diagnosis. There was tremendous impulse on coughing, the thing had become considerably smaller, and finally it gave no impulse when the child cried.

ADMINISTRATION OF QUININE IN CASES OF IRRITABLE STOMACH.

That quinine requires to be administered in cases which are accompanied with irritability of stomach and bowel is shown by Dr. Aitken's attempts (Report, British Medical Association, at Cardiff, 1885) to render the subcutaneous injection of the drug innocuous. Doubtless, too, in zymotics, especially typhoid, where putrefactive (germs) fermentation goes on to a great extent in the stomach, frequently repeated doses of the drug would retard or destroy the processes, while not interfering with digestion. Mr. John Reid (*Australasian Medical Gazette*, December 15, 1885) proposes, therefore, for cases of irritable stomach, to dissolve quinine in citric acid (glycerin may be added), and made into an ordinary mixture. Dispense bicarbonate of sodium in powders, more than sufficient to neutralize the citric acid *of a dose*. Add the soda to milk in a glass, stir well, then add dose of quinine mixture, still stirring. The effervescing draught, somewhat resembling sparkling koumiss, will be tolerated by the stomach, even when the tongue is red and irritable; the tongue, after the draught, changing its character.

Reviews.

An Atlas of Clinical Microscopy. By Alexander Peyer, M.D. Translated and edited by Alfred C. Girard, M.D. Ninety Plates, with one hundred and five Illustrations, Chromo-Lithographs.
New York: D. Appleton & Co., 1885.

"While engaged in the practice of medicine I had recognized the necessity for a physician to become familiar with the microscope if he made any pretension to scientific treatment."

This, the second sentence of the author's preface, echoes the experience of not a few.

From being an exceptional accomplishment, familiarity with the microscope and its clinical applications has become a necessity,—an additional refinement of sense for every progressive practitioner. What a man actively engaged in the routine of practice *may* do the atlas before us bears witness; for its author tells us the plates are selections from a large collection, which grew within a few years as the fruit of the "pleasant habit" of carefully sketching everything met with in his clinical examinations.

The subjects illustrated are divided into nine chapters,—Blood, Mammary Secretion, Urine, Sputum, Intestinal Contents, Contents of Stomach, Contents of Abdominal Tumors, Secretion of the Female Sexual Organs, and Micro-Organisms producing Disease.

The ninety plates are accompanied by concise descriptions of varying merit, the text being at times of but slight moment, at others pregnant with facts.

The first three plates—twelve figures—are devoted to the blood, a few figures illustrating its normal conditions, while the remainder represent a number of pathological changes. The forms and coloring of the hæmin crystals by no means accurately represent these important subjects.

The subject of the following plate, with four figures, is the mammary secretion, in health and in inflammatory conditions.

Chapter III.—Examination of the Urine—is by far the most elaborate of the book, claiming over two-thirds of the entire number of plates.

The section is introduced with a concise review of the general qualities of the urine, followed by a number of the more important tests for albumen and sugar. Of the thirty-six plates illustrating urinary examinations proper, nineteen are acceptable representations of crystals of greater or less importance. Seldom, however, is it that uric acid appears as resplendent in gorgeous colors as do the crystals of some before us.

Plates 27–44 figure the forms of tube-casts, and are second to none in importance. If we pass the last of these with a sense of disappointment, it is, possibly, but a reassertion of the conviction that drawings never convey the exact appearance of the more delicate forms of casts as seen under the instrument. The too-pronounced and often harsh outlines, and the loss of the peculiar transparency of the hyaline varieties, do not mark these drawings as favorable exceptions.

The remaining twenty-six plates of the chapter on the urine illustrate hemorrhagic, catarrhal, and inflammatory conditions of the kidney and urinary tract, including a rather prolix account of "Spermatorrhœa" through eleven plates. Among these latter the one representing the hyaline cylinders sometimes found in spermatorrhœa is the most interesting, as indicating a possible source of error in the diagnosis of grave kidney-trouble from the presence of apparently hyaline tube-casts.

After so generous an allotment of plates to comparatively unimportant conditions of the urine, the discussion of the important section relating to sputum, in fourteen plates, at least four of which have little value, seems meagre.

Plate 74, representing the Charcot-Neuman —so-called asthma—crystals will be examined with interest. A series of drawings of the sputum in the various stages of pneumonia would have made an acceptable addition; likewise further illustrations of phthisical expectorations would have been of interest.

Of the four plates relating to the stool, our author contents himself with a single drawing of objects found in normal fæces, in addition to the presence of parasites.

Of the many interesting conditions regarding which valuable information may be obtained by microscopical examination, he has nothing.

Plate 85, after Koch, represents the "comma" bacillus of cholera. A useful supplementary drawing would have been one showing *other curved* bacilli under identical amplification, demonstrating the *differences* between these common forms and the supposed pathogenic organism described by Koch.

Four plates follow, with contents of the stomach, including vomit in chronic catarrh, contents of an ovarian cyst, and leucorrhœa of pregnancy as subjects.

The final plate represents the micro-organisms supposed to be genetic of pyæmia, typhoid fever, pneumonia, and gonorrhœa, it being a fair reproduction of part of the well-known figures by Friedländer.

Considered collectively, the drawings are generally well executed: an occasional inferior plate is offset by the few of especial merit.

The wisdom of devoting so large a portion of the illustrations to the urine, at an apparent expense to the fulness of other equally important subjects, may be questioned. A judicious economy of space by the union of the salient features of several plates in not a few instances, would offer an opportunity to make

additions which would enhance the practical value of the book as a clinical guide.

In conclusion, we cannot forbear expressing our protest against the omission of the amplification of the figures. The term "weak" power is too vague to convey any definite ideas to those little acquainted with microscopical examinations,—the very class for whom these plates have the most value,—while "with Hartnack 7 or 9" to many American readers will be scarcely less unsatisfactory. As a specimen of book-making the volume is very attractive, the imprint of its well-known publishers being sufficient guarantee for the excellence of the mechanical execution.

TRANSACTIONS OF THE ACADEMY OF MEDICINE IN IRELAND. Vol. III. Edited by William Thomson, M.A., F.R.C.S.

Dublin: Fannin & Company, Grafton Street; London: Ballière, Tindall, Cox; Edinburgh: MacLachlan & Stewart. 1885.

The Academy of Medicine of Ireland is an institution with which we confess we were unacquainted until the volume now before us came into our hands. It appears that this society was organized in the year 1882, and the present Transactions, having the date of 1885, is the third of its series. If the first two volumes are as valuable as the present, this new medical society must be considered to have taken a foremost rank among the similar societies of the world. It seems to us extraordinary that in this great country of America, with its alleged sixty thousand doctors, we cannot have one medical society whose transactions shall favorably compare with that put forth by this lusty medical infant of the evergreen island.

The book before us itself contains about five hundred pages, which are chiefly filled by short articles covering almost the whole field of practical medicine, and in many places entering upon the domain of hygiene, anatomy, physiology, and other sciences allied to practical medicine. The first paper is an elaborate article by Mr. Walter G. Smith, upon Lupus and its treatment. Then there comes a report of a case of Anuria, by Mr. Walter Bernard; then an article upon Hereditary Amaurosis, by Mr. John B. Story; next an article upon Cholera in India, by Surgeon-Major Hamilton, in which the preventive medicine, so called, of the disease is especially considered. Mr. Hamilton is not much of an enthusiast, either as regards the prevention and treatment of cholera, confessing that "at present the outlook as regards the prevention and treatment of cholera is dark indeed."

Space is lacking in which to even mention, let alone to discuss in detail, the very many papers, the scores of articles which are here collected together. We can only note a few points. In an interesting article Dr. J. M. Finny discusses Hyperpyrexia in rheumatic fevers, and the cases of so-called Cerebral Rheumatism, but fails, as it seems to us, to comprehend the disease through lack of clear recognition of the fact that there are two or three essentially different forms of this Cerebral Rheumatism, and through failure to apprehend the modern theory in regard to the nervous origin of fever. It is plain that he knows the work of Dr. H. C. Wood simply by references to it which have been made from time to time in European medical journals. The theory is not, as Dr. Finny seems to think, "that the liberation of heat on the surface of the body is controlled or restrained in fever through disorders of the nerves, so that by retention the temperature rises;" but the theory is that fever is due to a disturbance of the relation between the nerve-centres which control the production and the dissipation of animal heat, and that there is also such a paralytic condition of the inhibitory heat-centres that chemical movements in the stored tissues of the body occur more rapidly than in health.

An interesting paper is that by Dr. Cruise, on Contrexeville and Royal-les-Bains; a paper which may be read with great advantage by almost every American physician who has patients suffering from gouty disease desirous of visiting European springs. Mr. Charles B. Ball has an exceedingly interesting article on the very frequent development of papillomata on the hands of workers in carbolic acid factories and their conversion into malignant infiltrating epithelioma; a paper which finds its corroboration and support in an article by Mr. John B. Stewart, describing the production of epithelioma of the eyelids by irritation from crude carbolic acid. We shall conclude our review of this very interesting book by remarking upon a paper by P. S. Abraham in regard to the habit of eating themselves up sometimes developed in carnivorous animals during confinement. A fine lioness in the Zoological Gardens in Phœnix Park, Dublin, was discovered to have devoured some six inches of her tail, hair, skin, bones, all complete. A week or two later, one night she again took to eating her unfortunate caudal appendage, and so continued until the

butt was so short and uncomeatable that the beast was forced to let it alone. A month or two later she began at one of her forepaws, and continued to gnaw it until there was but little left of it; finally, the agony from the mutilated foot and tail became so great that the beast was shot. During the whole period the animal seemed to be in perfect health, her excretions were normal, her fur, flesh, and appetite in excellent condition. Changes of food and various other expedients were tried in order to save the lioness, which was valuable and had had three sets of cubs. This incident led Mr. Abraham to correspond with the authorities of almost every zoological garden of importance of Europe; he found that although the occurrence is rare, self-eating does happen every now and then with almost all of the carnivora. A very curious fact is that monkeys quite frequently feast upon their own tails. Parrots also have been noticed to devour their feathers and flesh. Mr. Abraham is inclined to believe, along with some of the superintendents of the gardens, that these animals are insane, and that the perversion of taste may be looked upon as one of the manifestations in the lower animals of that protean affection which we call hysteria. On the whole, we think it would not be a bad thing if some of the hysterical females belonging to the species Homo (variety Americana) would imitate the lower animals in this disappearing down their own throats.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION; Seventeenth Annual Session, Houston, Texas.

Austin, Texas: Printed for the Texas State Medical Association, 1885.

This is a well-printed book, containing the usual rhetorical addresses seen in works of its class, and chiefly valuable on account of a number of cases which are reported in it. The most remarkable article seems to us to be that of Dr. M. Ramsdell, of Lampases, Texas, in which are reported ten cases of serious acute attacks asserted to be due to biting from spiders. The symptoms seem to be nausea and vomiting, increase of temperature, sharp, shooting pains, or burning pains, in the back, head, and limbs, with profuse sweating, and more or less general depression. None of the cases died, but one woman, who was furiously delirious for twenty-four hours after the bite, was seriously affected for two weeks. In a book like the present, with its limited circulation outside the district it represents, reported cases were in the past practically buried so far as concerns the general medical profession of the world, but now, thanks to the Index Medicus, facts worthy of remembrance are marshalled into their line even though they belong to the cohorts of a remote region.

ORGANIC MATERIA MEDICA AND THERAPEUTICS. By James Young Simpson, M.D.

New York: J. H. Vail & Co.

This is a book of 328 small pages occupied with handsomely displayed type, arranged in greater part in short sentences. It is a brochure which is offered as a high road to the regions of the student's Paradise, to the gardens of professional preferment which lie beyond the dark gates of examination. As a work for cramming it may have some value, but that the committing of its whole contents would in any degree prepare a man for the practice of medicine admits of grave doubts. Possibly, however, he would be a little better off than if he had never studied the subject at all, but he certainly would not even reach that first mental condition which is the vestibule to the temple of knowledge, namely, conviction of the extent and depth and breadth of his own ignorance.

THE POPULAR SCIENCE MONTHLY.

This is a very valuable magazine, both interesting and instructing. We are informed that General John Newton, Chief of Engineers, United States Army, originator of the plan and director of the work, has prepared a complete account of the operations for the removal of the obstructions at Hell Gate, from their beginning to the explosion of Flood Rock, in October last, which will appear with full and new illustrations as the leading article in the February number.

THE December number of Wood's Library of Standard Medical Authors is a reprint in one volume of two books by Dr. W. R. Gowers, of London, of Diseases of the Brain and of Diseases of the Spinal Cord. The original editions of these works have been so thoroughly reviewed, and are so well known to the reading medical public, that of course no further notice of them would be at present in order.

REVUE SCIENTIFIQUE.

The following is a summary of the table of contents of the *Revue Scientifique* for the past month:

December 26, 1885:

Public Works.—The Port of Marseilles. By M. de Flaix.

Psychology.—Consecutive Images and Visual Memory. By M. A. Binet.

Miscellany.—The Colonial Future of France. By M. Janssen.

Chemistry.—Chlorinated Ethyl Benzines. By M. Israti.

Proceedings of the Academy of Sciences of Paris.

Correspondence and New Inventions.

January 2, 1886:

Progress of the Sciences.—Contemporary Science. By Huxley.

Psychology.—Intelligence of Animals. By M. J. Delbœuf.

Physiology.—Lessons on Animal Heat. Fishes and Temperature. By M. Richet.

Astronomy.—The New Star. By M. Barré.

Zoology.—The Organs of Flight in the Animal Series.

Book Notices.—Diseases of the Nervous System. By M. Grasset.

Proceedings of the Academy of Sciences of Paris.

Correspondence and New Inventions.

January 9, 1886:

The Scientific Congress.—Criminal Anthropology in 1885. By M. E. Ferri.

Miscellany.—Russian Surgeon at Sebastopol. By Pirogoff.

Physiology.—Lessons on Animal Heat. By M. Richet.

Zoology.—Development of the Genital Organs in Gasteropods. By M. Rouzaud.

Book Notices.—Diseases of the Ear. By M. Gellé.

Proceedings of the Academy of Sciences of Paris.

Correspondence and New Inventions.

January 16, 1886:

Biology.—The History of General Anatomy. By M. Duval.

Physiology.—Lessons on Animal Heat. By M. Richet.

Psychology.—Religious Exaltation in the Orient. By M. Zambaco.

Miscellany.—Balzac and Chemistry. By M. Grimeaux.

Book Notices.—Hygiene in Dwelling-Houses (F. and E. Putzeis); Legal Medicine, Medical Jurisprudence, and Toxicology (M. Legrande du Saulle).

Proceedings of the Academy of Sciences of Paris.

Correspondence and New Inventions.

January 23, 1886:

Geography.—The New Congo State. By M. Plauchut.

Biology.—The History of General Anatomy. By M. Duval.

Geology.—The Earthquakes in Algeria in December, 1885.

Zoology.—The Fossil Fish in Roumania. By M. Cosmovici.

Book Notices.—Medical Zoology (M. R. Blanchard); Magnetism and Hypnotism.

Proceedings of the Academy of Sciences of Paris.

Correspondence and New Inventions.

Correspondence.

PALATABLE PRESCRIBING.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—The article by Dr. Martin, of Chicago, on *Palatable Therapeutics* suggests to my mind more difficulty than it removes. If we are to contest with the homœopath, who can readily render a prescription which, medicinally, contains nothing, both pleasing to the palate and gratifying to the man who holds the purse-string, we might as well give up the race at once.

Let all honor be given to the French pharmacists and physicians who have long taken the lead, by innumerable ingenious devices, through which medicines are presented in agreeable form, while we freely avail ourselves of the latest advances of pharmaceutical chemistry of our own day and our own land.

But the homœopath has entered a domain wherein it is hopeless that we should think to contest. Our first duty is to deal with candor and to speak the truth to our patients; our first and constant purpose is to save, to cure, to relieve. When we have decided what is the surest and readiest means to this end, we may make our presence and interposition as pleasant as possible.

It is far from certain that we always have the full energy and efficacy of the drug given us in its principal alkaloid or glucoside. If the patient's stomach positively refuses to take our few drops of tr. digitalis, we will do our next best for him with digitaline; but not because his palate is offended.

I yield to no one in my admiration of the elastic capsules of the balsams. But the patient must have learned to swallow a pill before he can take medicine in this form, for

the capsule cannot at option be chewed or swallowed or spit out, with equal present impression and subsequent result, as if it were a homœopathic pill. Still again, too often the weak stomach shows offence if ten minims of a sharp balsamic oil be suddenly discharged into its cavity, and the patient, whose homœopathic neighbor we are striving to please, will quite likely complain if he is directed to take a wineglass of milk or broth with every capsule. It were no more trouble to swallow a turpentine emulsion at first hand.

Once more, I contend that it is not often feasible to administer the alkaline bromides in capsule-form, considering the usual change. Moreover, what are we to do towards gratification of appetite when it comes to the occasional massive dose of potass. iodide which Séguin and Jonathan Hutchinson, *e.g.*, urge nowadays? Many of us think we find frequent occasion to order strychnine and phosphorus in much larger doses than the gr. $\frac{1}{60}$, $\frac{1}{100}$, $\frac{1}{150}$, which the obliging New York pill-makers turn out by the myriad annually for the profession. The gr. $\frac{1}{15}$ to $\frac{1}{24}$ of one or the other hardly makes a pleasant impression upon the patient that has been nurtured on homœopathic sweetmeats.

It will not come amiss to recall, in this connection, the counsel which Sydenham gives in his first preface: In the capacity of *Homœopath* (*ὁμοιοπα θὴς*), says this great writer, ought every physician to enter the chamber of his patients,—writing, as he did, a good hundred years before Hahnemann stole and prostituted the word,—that is, *as a fellow-sufferer and in full sympathy.*

Surely, when the situation is reversed, as it is likely with all of us to be some time, and we call in the doctor, we shall wish our physician to give first and chief attention to something else than rendering himself and his remedies flattering and sweet.

Yours faithfully,

HENRY M. FIELD.

THE AXIS-TRACTION FORCEPS.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In the THERAPEUTIC GAZETTE of December 15, 1885, I notice an editorial on the above subject, which is almost an exact copy of one that appeared in the *Journal of the American Medical Association*, September 26, 1885, to which I have duly replied in the same journal of October 17 and October 31. Should any of your readers take the least interest in this matter, I trust it may save you the trouble of further copying by referring them at once to the above journals. In every article I have written on this subject, in every verbal explanation of this instrument I have uttered, I have invariably and without any exception credited the button-hole joint to Dr. Felsenreich. To two disingenuous criticisms I have categorically answered, and in the most courteous terms corrected misrepresentations, and stated that I took the button-hole joint from Dr. Felsenreich.

The accusation contrary to this fact is again reiterated, and I pronounce it *palpably but unqualifiedly and wilfully false!*

Respectfully, DR. L. E. NEALE.

BALTIMORE, January 3, 1886.

[In order that no injustice may be done, we print this letter of Dr. Neale's. The editorial alluded to by Dr. Neale and that which appeared in this journal were written by the same hand, hence the resemblance between them. Our own editorial was written before the replies of the doctor in the *Association Journal* were read. We cannot occupy the columns of this journal with any further controversy concerning the matter. On the 18th of December an article was read by Dr. W. W. Jaggard before the Chicago Gynæcological Society, in which the whole subject has been traversed. This article has at present writing not yet appeared, but we are informed that it will be published in a few days; to it readers desirous of following out the matter are referred.—EDS.]

GONORRHŒA IN WOMEN.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—The article in the December number of the GAZETTE, entitled "On the Importance and Diagnosis of Gonorrhœa in Women," so nearly describes a condition found in a young woman who called at my office a few months ago to be treated for gonorrhœa, that I will give a short history of the case. The patient said she was treated for the disease a short time previous by a physician of Indianapolis, Indiana, and was dismissed with the assurance that she was cured. Acting on this assurance from the doctor, to her dismay she brought misfortune to one of the other sex.

A thorough examination of the whole surface of both the vagina and the vulva revealed no trace of the disease. On turning my attention to the cervix, there I found pus,

to every appearance gonorrhœal, with a diseased surface extending to the depth of about half an inch. After pursuing a course of treatment which consisted, principally, in the application of nitrate of silver in stick form, the patient was dismissed with every appearance of being cured.

Respectfully yours,
H. L. PRATT, M.D.

ELGIN, ILLINOIS, January 2, 1886.

CHLOROFORM TREATMENT OF TAPE-WORM.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—The question as to whom belongs the credit of first employing chloroform for the expulsion of tapeworm seems to interest quite a number of your readers. I would therefore state that before the class of the Ohio Medical School of 1864–65, Prof. Blackman, when lecturing on the anæsthetic properties of chloroform, mentioned in a humorous way that it had been employed in drachm doses, followed by castor oil, for expelling tapeworms. Many of the class made a note of it, and if they will refer to their old memorandum-books, will no doubt bear me out in my statement. So we must go back prior to 1864 to find the originator of this method of treatment.

Respectfully yours, etc.,
C. GERSTMEYER.

TERRE HAUTE, IND., January 22, 1886.

Notes and Queries.

MUSSEL-POISONING.

An unfortunate instance of poisoning by mussels (*Mytilus edulis*) recently took place at Wilhelmshaven (*Medical Press*, November 25, 1885). Two vessels were taken into dry-dock on October 17 for the purpose of cleaning, the sides of which were covered with the common mussel. The dock work-people collected large quantities and took them home, where they were prepared and eaten. Very shortly after partaking of them symptoms of poisoning set in, nineteen people being attacked,—thirteen men, five women, and one child. Nine of the cases were serious. Within one and three-quarter hours after eating the mussels the first death took place, and three others followed within four and a half hours. The Kreisphysikus, Dr. Schmidtmann, made a post-mortem examination in the last case. The condition met with corresponded to irritant poisoning,—redness and swelling, and in many places complete detachment of the mucous membrane of the intestine. The remains of mussels were among the intestinal contents, but no older masses. The spleen was swollen and thickened. Dr. Schmidtmann attributed the poisoning to a ptomaine, but Virchow could not agree with this. He is, however, inclined to the view that it was due to an alkaloid. Portions of the bodies and various quantities of the mussels were submitted to Professors Virchow and Koch for examination, and these gentlemen, supported by Professors Eilhard, Schulze, Salkowski, and Wolff, instituted experimental investigations with them, the result of which they have reported. Both the flesh and decoction contain the poison, which is weakened neither by heat nor by alcohol. Small animals were killed by it in a quarter of an hour. The poison is said to act like curare, by paralyzing the motor nerves. Virchow places the poison in the series of fish-poisons that develop in both dead and living fishes. He also reported that Koch had discovered several characteristic bacilli, but that he had not succeeded in propagating them, so that no definite judgment could be pronounced upon them.

Professor Salkowski reported that all the active extracts of the poison were at once rendered inactive by moistening with a drop of sodium bicarbonate. From this he concludes that the poison is a fugitive alkaloid that had as yet not been isolated. The ships were not copper-bottomed, so that there could be no question of the mussels being rendered poisonous by metallic absorption.

The Paris correspondent of the *British Medical Journal* (December 12, 1885) refers to a somewhat similar case reported by DR. LABORDÉRIE. The patient was an itinerant dealer in vegetables; he was seized one night with violent pain in the mouth and pharynx, and respiration became difficult. The patient sat up or walked about all the night. The buccal mucous membrane and the tonsils were excessively red, and the tongue was white. Diarrhœa and vomiting set in during the night; the neck became stiff and tender; the heart and lungs were perfectly normal, and all symptoms of gastric disturbance were absent. The patient, two years ago, had an attack of multi-articular rheumatism. The evening before he was taken ill he had eaten plentifully of mussels. M. Labordérie remembered the connection between urticaria and rheumatism, noted by M. Potain in a clinical lecture, but admitted the possibility

that his patient was suffering from urticaria, provoked by eating mussels. He prescribed an emetic and a draught containing 60 grains of salicylate of sodium. The pains in the mouth and pharynx disappeared, breathing became normal, and an eruption of urticaria covered the patient. M. Potain, in one of his clinical lessons, said that he had twice experienced the same symptoms after eating mussels, and had twice suffered from urticaria as the result of drinking seltzer-water on a very hot day.

QUILLAIC ACID.

What is ordinarily known in commerce under the name of saponine is not a distinct substance, but a mixture of various organic and inorganic matters. The toxic properties of the saponine of commerce are, according to KOBERT (*Gazette Méd. de Paris*, No. 42, 1885), due to the presence of two principles for which he proposes the names of quillaic acid and sapotoxine. To obtain the first of these a decoction of quillaja bark is precipitated by neutral acetate of lead ; the precipitate, after being well washed, is freed from lead, reduced by boiling, and the residue dissolved in absolute alcohol ; after filtering and evaporation, the residue is again dissolved in a mixture of five parts of chloroform to one part of alcohol. By these means a great part of the coloring matter is avoided. On the addition of ether to this filtrate, quillaic acid is deposited in snowy flakes, which are dried over sulphuric acid. The poisonous property of this acid and its saline combinations is enormous. It is only necessary to inject $\frac{5}{1000}$ of a grain for each pound of body weight into the veins of a dog or a cat to produce death, while 30 grains administered by the mouth are safely borne. By heating this acid in contact with a solution of baryta the poisonous properties are entirely lost. Kobert is therefore led to believe that saponine is an inert product of the transformation of quillaic acid.

TEREBENE.

Some uncertainty appears to prevail respecting a material recently introduced, under the name of terebene, to the notice of medical men, for inhalation in cases of winter cough and other purposes, which we are informed has been a cause of inconvenience in several instances. DR. MURRELL'S paper on the use of terebene appeared in the *British Medical Journal* of the 12th of December last, and was abstracted in our last issue, and in it he referred to the pure form of the substance that has been well known to chemists for many years. He spoke of having used terebene during the last five years with excellent results in numerous cases of winter cough. That substance he correctly described as a product of the action of sulphuric acid upon turpentine oil, a clear colorless oily liquid, having an agreeable odor like that of fresh-sawn pine wood, which though not miscible with water could be given upon sugar, as the dose is small. This description of a substance well known to chemists would have been sufficient, but unfortunately Dr. Murrell added that the substance he referred to was not the same as "the patent medicine sold under the name of 'Terebene.'" The following week a letter appeared in the same journal from DR. BOND, of Gloucester, in which he spoke of himself as being the person who originally brought terebene under the notice of the profession, and further led to the inference that the manufacture of terebene was the subject of a patent. Hence has arisen the inconvenience above referred to, and as several communications have appeared on the subject, we think it desirable to draw attention to the recorded information respecting terebene and its products, as well as to the patents of Dr. Bond for certain applications of this material (*Pharm. Journ. and Trans.*, January 16, 1886).

The hydrocarbon having a composition represented by the formula $C_{10}H_{16}$, which is the chief constituent of turpentine oil and termed terebenthene, as obtained from French turpentine (*Pinus maritima*), has a specific gravity of 0.864 ; its boiling-point is 161° C., and it has a specific rotatory power = —42.3°. English turpentine oil (*Pinus australis* and *P. tæda*) contains a corresponding hydrocarbon termed australene, having the same specific gravity and boiling-point as terebenthene, but it differs from that in being dextrorotatory, the specific rotatory power being = +21.5°. Under the influence of heat both hydrocarbons undergo alteration, the rotatory power being reduced and the boiling-point raised ; the change that takes place being a modification of the molecular structure, giving rise to isomeric and polymeric products. One of these products of molecular transformation of turpentine oil is the substance termed terebene, which Dr. Murrell has recommended for medicinal use.

According to the description given of that isomeric or polymeric modification of the chief constituent of turpentine oil, which has been

named terebene, it is an oily liquid having the odor of thyme oil, a specific gravity of 0.864 and a boiling-point of 156° C. Its chief peculiarity consists in its being optically inactive, while the hydrocarbons terebenthene and australene from which it is produced have a rotatory power. It is obtainable by the action of various reagents upon terebenthene, the one most effective for this purpose being boron fluoride, which, it is stated, instantly converts one hundred and sixty parts of terebenthene with great rise of temperature; but by this reagent other products besides terebene are produced, all of them agreeing in being optically inactive, but some having a boiling-point above 300° C. Concentrated sulphuric acid acts in a similar manner, but less energetically. To prepare terebene in this way rectified turpentine oil is to be mixed with one-twentieth part of oil of vitriol and the mixture left to stand for twenty-four hours. The clear liquid is then decanted off from the sediment and distilled, this operation being repeated several times until the product no longer acts upon polarized light. It is then washed with water and carbonate of sodium solution, dried over calcium chloride, and distilled. The same molecular alteration is produced by several acids, such as boric acid, and even acetic, citric, and tartaric acids, with the aid of heat, but the action is very slow. Zinc chloride acts in a similar manner at 100° C.

A polymerized oil called colophene, having a boiling-point of from 310° to 315° C., a specific gravity of .94, and an aromatic odor, is also produced, together with terebene in the process above described, as well as other polyterebenes of higher density and boiling-point, and all differing from turpentine oil in being optically inactive.

In the specification of Dr. Bond's patent for the preparation of disinfectants (1874, No. 1510, England) the application of terebene for this purpose is claimed as part of the invention, but the substance itself is spoken of as an isomeric derivative of turpentine oil that was then well known to chemists, and had been described in many chemical works. In the specification of a subsequent patent (1874, No. 3799) the application of both terebene and colophene for the same purposes is also claimed, and it is stated that the material distinguished in the specification by the name of "terebene" was to be understood as a mixture of the substances known to chemists as terebene and colophene. It is clear, therefore, that so far as these patents have anything to do with terebene it is in regard to a matter quite apart from its application as a medicinal agent, and that there is nothing in the specifications of these patents to justify the application of the term "patent medicine" to terebene. A crude form of polymerized turpentine oil has been sold under the name of terebene, but it was not of such a nature as to be suitable for medicinal purposes, though it has been used to some extent as a disinfectant and deodorizer.

From what has been stated, therefore, it is evident that the preparation of terebene by the process above described may be carried out by any one that desires to do so without fear of interference with patent rights of any kind; and as the recommendation of this article for medicinal use by Dr. Murrell will no doubt create a demand for it, we have thought a statement of these facts and a description of the method of preparation would be useful to some of our readers.

RANUNCULUS ACRIS AS AN EPISPASTIC.

H. Froelich (*Centrall. f. die Gesammte Therapie*, October, 1885) states that fresh ranunculus taken internally acts as a powerful irritant to the entire alimentary canal, even producing severe inflammation, and that it seems to increase the secretion of urine. Externally, it also acts as an irritant to the skin. This latter property has been investigated by Froelich by rubbing up about three hundred grains of freshly-plucked flowers and blossoms, and then applying them, in the form of a poultice or of a dressing, to the skin. After an hour, the skin was reddened, somewhat painful, and after two hours, of a bright red color, swollen and tense. After the removal of the dressing, which was not in position more than two hours, a number of discrete, and later confluent blisters formed, so that on the fifth or sixth day the entire epidermis over the point of application could be removed; the wound healed again in ten to twelve days. This irritant action on the skin is slower of production than that of mustard, but is more intense, and is more comparable to that of the fly-blister.

ACTION OF PELLETIERINE ON THE EYE.

According to the Paris correspondent of the *British Medical Journal* (November 28, 1885), M. Galezowski read a paper before the Académie de Médecine on the action of pelle-

tierine on the motor nerves of the eye. His researches are based on the ocular disturbance which occurs in subjects who absorb pelletierine; they are affected with diplopia. The observance of this fact induced M. Galezowski to prescribe pelletierine when there is paralysis of the third and sixth pairs. Iodide of potassium and blisters have failed where pelletierine has cured; the preparation used is syrup of pelletierine, 1 gramme (15 grains) per 120 parts of syrup. From three to six doses were administered. Unfortunately, this substance is excessively dear. M. Galezowski hopes to meet this difficulty by administering pelletierine in subcutaneous injections.

ALCOHOLIC TREATMENT OF DISEASE.

In a paper recently communicated by Mr. George Sturge to the Hospitals Association, some very interesting figures are given representing the consumption of alcohol in various London and provincial hospitals (*Med. Press and Circular*, January 6, 1886). From the examination of one hundred and forty reports of hospitals, chiefly in England and Scotland, Mr. Sturge ascertained that great diversity in the practice of using alcoholic drinks as part of diet exists, and in some cases this practice has very much decreased. It appears that the consumption of alcohol varies from ten shillings and seven pence per patient in the Brompton Hospital to ten and three-quarter pence in the Manchester Infirmary. In the Middlesex Hospital the amount per patient was four shillings and three pence, while presumably the same class of disease was treated in the same number of patients in the Westminster Hospital at two shillings a head. In the provinces the Cambridge Infirmary tops the list with an expenditure of six shillings and seven pence per patient, while the Manchester Infirmary, which deals with a class of patients much more likely to need stimulation, outlayed only a seventh of the money—ten and three-quarter pence—to produce similar results. To illustrate the possibility of working a hospital satisfactorily on a greatly reduced expenditure on alcohol, Mr. Sturge points out that in ten years the expenditure of the Middlesex Hospital on alcohol has come down from ten hundred and seventy-nine pounds to five hundred and forty-seven pounds, while that of the Manchester Infirmary has fallen in the same period from seven shillings and two and one-half pence per patient to ten and three-quarter pence. Mr. Sturge states that at the London Temperance Hospital two thousand eight hundred and sixty-two patients were treated at a mortality rate of less than five per cent., but of course no safe deduction can be made from this statement until we know whether the cases treated were on an average of the same type and character as those in the general hospitals. We are, however, safe in concluding that there is "something rotten" in the hospital system which admits of these diversities of practice in the various institutions. If the Manchester Infirmary can do full justice to its patients on an alcohol allowance of ten and three-quarter pence, it is a monstrous abuse that Cambridge should waste six shillings and seven pence on an article which, if it be not necessary, is at best a luxury, and at worst, an injury to the patient. What right has any institution to beg for public charity, and when it receives that charity, to throw it away on an article which —judging from the experience of other institutions—seems to be no more useful in most cases than lollypops would be?

PILOCARPIDINE, A NEW BASE IN JABORANDI-LEAVES.

Merck has suceeded in isolating a third base from the leaves of the jaborandi. This body, which has been studied by Harnack, who has given it the name of pilocarpidine, in its free state is a syrup, which, in the form of a nitrate, forms voluminous columnar crystals resembling those of saltpetre. Its chemical properties are apparently identical with those of pilocarpine, although, like the latter, it is not precipitated from watery solutions by chloride of gold. Like pilocarpine it is readily transformed into an amorphous base endowed with physiological properties similar to those of atropine, and which Harnack proposes to designate under the name of jaboridine. As regards physiological action, pilocarpidine appears to closely resemble pilocarpine.—*Gazette Méd. de Paris*, No. 42, 1885.

THE ACTIVE CONSTITUENT OF THE ROOT OF BAPTISIA TINCTORIA.

According to Von Schroeder (*Pharm. Post*, October, 1885), the active constituents of this root consist,—first, of a glucoside, baptisin, which is insoluble in water, and which acts physiologically, like the indifferent bitter substances; second, a glucoside, baptin, which is soluble in water, from which it crystallizes in microscopic needles; it is a feeble laxa-

tive; third, of an alkaloid, baptitoxine, which is poisonous in small doses. This alkaloid in a frog produced arrest of respiration and then central paralysis. In mammals it causes acceleration of respiration and increase of reflex action. Death follows as a consequence of paralysis of respiration.

A HIDDEN DANGER.

The risk of conveying parasitic disease by means of the brushes and combs used in hairdressing is not an imaginary one. It is no doubt much reduced in the better-class establishments by careful attention to cleanliness of the implements used, but even in them accidents are liable to occur at times from forgetfulness or neglect. A rush of customers cannot always be controlled, and there may not be time in each case to provide against the transference of contagion, which, perhaps, may be exceptional, and, as a rule, unlooked for in the course of a given business. Such unusual circumstances have nevertheless to be considered and dealt with. Some will insist that a good supply of brushes in permanent use, with regular cleansing, is the only reliable guarantee for all emergencies. Against the grounds of this argument nothing can, of course, be said. If the plan is borne out in practice, no ill can come of it. At the same time further suggestions are both admissible and welcome. Among such it may be well to note a method, in favor of which all others have been discarded by a Liverpool operator. This consists in supplying each customer with a separate and personal brush, which is, in ordinary phrase, "given in" with the hair-cutting. The plan appears to pay, and we may readily believe the assurance of its originator, that by its employment the fear of parasitic troubles is reduced to a minimum. A comb is not mentioned as being given along with the brush; but this, again, can be much more easily and rapidly disinfected as required, and practically, we suppose, may be left out of account. Certainly the novel arrangement with regard to brushing is a gain on the side of healthy practice.—*Lancet*, January 2, 1886.

A NEW BALSAM.

In the *Archiv der Pharmacie* (November, 1885, p. 817) DR. P. ZIPPERER describes and illustrates the structure of the root of Parameria vulneraria, Radl., which is used by the natives of the Philippine Islands, as well as by the residents there, to furnish a kind of balsam that possesses remarkable healing properties. This is known by the name of Cebu, or Tagulaway balsam. It is prepared by boiling the bark of the roots and twigs, as well as the leaves, of the plant in cocoanut oil, and forms a yellowish-white oily liquid having a peculiar odor. Dr. Zipperer's examination of the plant shows that it contains 8.5 per cent. caoutchouc in its tissues and three per cent. resin soluble in alcohol, and to these constituents its value appears to be due. Dr. Zipperer states that during two years' residence in the Philippines he had seen the balsam used by European doctors, as well as by the natives, with great success in various skin-diseases and for healing wounds. It appears to promote an unusually rapid cicatrization. The plant is a climber, growing in the mountainous declivities of the island of Cebu, whence it is chiefly obtained.—*Pharm. Journal and Trans.*, November 28, 1885.

THE PREVENTION OF BALDNESS.

It has been estimated that one-half the adult men of American birth living in our cities are bald-headed. The estimate is not exaggerated, if it is applied to persons above the age of thirty, and it may be rather under the mark. If, now, it be conceded that one-half of our American business and professional men are bald at the present time, it would be interesting to speculate as to the condition of the heads of their descendants some hundreds of years from now. The probabilities point toward a race of hairless Americans, for baldness is extremely liable to be propagated in the male line, and to appear a little earlier in each generation. The American nation is threatened with the catastrophe of a universal alopecia.

It appears to be worth while, therefore, to consider the subject of prevention, since no means have yet been found for the cure. Why are so many men bald before their time?

The answer has almost always been that it is due to the excessive strain and ceaseless mental and physical activity to which American methods of business and modes of living conduce. From the visitors' gallery of the Stock Exchange, for example, one views a mob of shining pates belonging, as a rule, to rather young men.

Any reformer, however, who expects to prevent baldness by changing American habits may as well stop at once, for he will surely

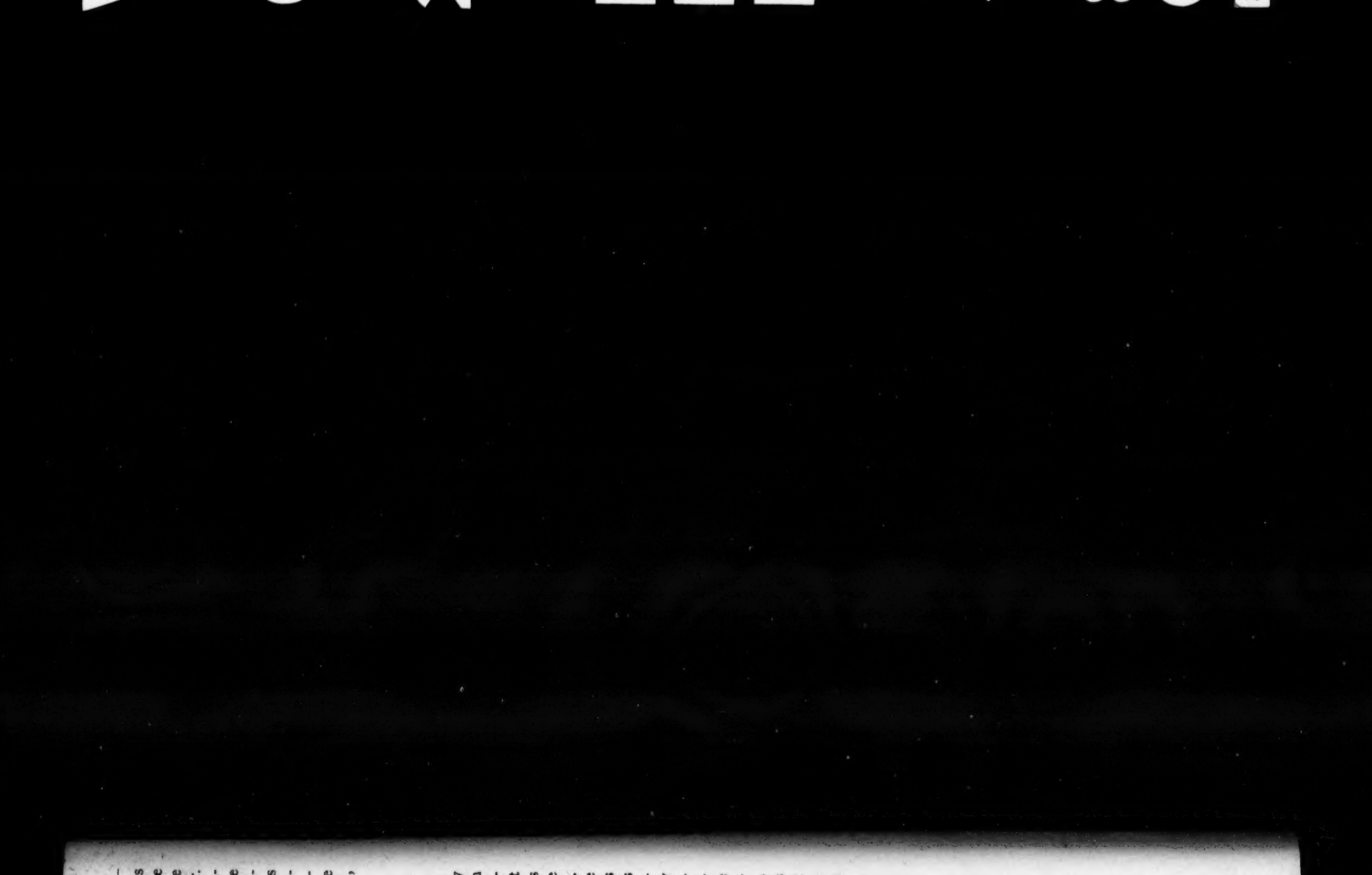
fail. Now, there may be, perhaps, help in some other quarter. The sons of prematurely bald fathers should bear in mind that if they wish to save their hair it will only be through industrious attention to their scalp. This much-neglected surface should be thoroughly cleansed at certain intervals It should be carefully and regularly examined, and if it be unhealthy, dry, and scurfy, the proper applications should be made to it. The wearing of unventilated hats is one of the greatest sources of failure of nutrition of the hair, and these must be avoided. The beard never falls out, because it gets plenty of sunlight and air. These are what the hair of the scalp needs, also. Women are less bald than men, because, for one reason, their scalps are better ventilated. In fine, civilization has made the hair-producing organs of the scalp delicate and feeble. They have to be nursed and cared for, or they atrophy and disappear. Young Americans who do not wish to lose their hair before they are forty must begin to look after their scalps before they are twenty. —*New York Med. Record*, January 23, 1886.

ICE TO THE SPINE IN OBSTINATE VOMITING.

Dr. W. L. Davis reports (*Mississippi Valley Med. Monthly*) a case of vomiting in typhoid fever in which every remedy, even pellets of ice, was rejected by the stomach. He applied ice to the lower part of the spine in considerable quantity, and the vomiting instantly ceased; a profuse perspiration followed. The use of ice was only persisted in when indicated; and cool sponging was instituted with marked benefit, so that the ice was only occasionally required. Recovery in the average time took place.

SUBCUTANEOUS INJECTIONS OF ATROPINE AND MORPHINE FOR THE PREVENTION OF CHLOROFORM-SYNCOPE.

In 1880, Dastre and Morat, starting with the assumption that the cause of chloroform-syncope was to be found in the action of the chloroform vapor on the pneumogastric, attempted to prevent arrest of the heart during chloroform-narcosis by means of atropine. Acting on this suggestion, Aubert (*Centrall. f. die Gesammte Ther.*, October, 1885) has employed this method with great success in preventing syncope in chloroform-narcosis. He employs a solution containing $\frac{1}{10}$ of a grain of sulphate of atropine and 1½ grains of the hydrochlorate of morphine in 160 minims of distilled water. On this solution a Pravaz syringeful is injected twenty or thirty minutes before the administration of the chloroform. The advantages of this method are claimed to be its safety and the rapid production of anæsthesia, rarely requiring more than two minutes, the absolute rest of the patient, the readiness with which the patient is aroused, and the slightness of the after-effects.

INFLAMMABLE COSTUMES.

Several instances of death have recently formed the subject of inquiry, during which it has been elicited that while dressing themselves in the light costumes usually worn at evening parties, the victims of these accidents have been severely burned as a consequence of their flimsy costumes becoming ignited. Often it is a candle held incautiously near the skirts that does the mischief; at other times the unfortunate pleasure-seeker approaches too near the fire, the exceedingly light character of her dress enabling it to be readily drawn to the flame by the natural current towards the chimney, and so leading to its destruction. In all these cases, however, the prime cause of the accident is the highly inflammable nature of the material out of which ball costumes are manufactured; and it is quite clear from the narratives of the painful accidents recorded within the last few days, that but for this circumstance the fatalities would not have happened. It is, therefore, the more essential to urge upon society the great importance of adopting some adequate means of obviating so great a danger to life in the future; and the most simple and effectual plan in this connection seems to be to prepare the dress-material employed in such a way as to ensure its being proof against fire. To this end several methods have been proposed, but we believe that which affords the greatest satisfaction is to steep the muslin or other garment in a solution of tungstate of sodium, whereby it is rendered quite non-inflammable, and may be worn with impunity in dangerous situations. It is much to be desired that the public should be aroused from its apathy in respect to this matter, and show an interest in a question of so much importance to itself.—*Med. Press and Circular*, January 6, 1886.